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# INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

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## HEARINGS

BEFORE THE

## JOINT ECONOMIC COMMITTEE
## CONGRESS OF THE UNITED STATES

NINETY-EIGHTH CONGRESS

FIRST SESSION

### PART 1

JUNE 24, 29, AND 30, 1983

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# CONTENTS

---

## WITNESSES AND STATEMENTS

### FRIDAY, JUNE 24, 1983

Page
Lungren, Hon. Dan, member of the Joint Economic Committee, presiding: Opening statement ..... 1
Albertine, John M., president, American Business Conference, Washington, D.C. ..... 3
Samuelson, Paul A., professor of economics, Massachusetts Institute of Technology, Cambridge, Mass ..... 22
Roberts, Paul Craig, senior fellow, Center for Strategic and International Studies, Georgetown University, Washington, D.C ..... 36
Oswald, Rudolph, director, Department of Economic Research, American Federation of Labor and Congress of Industrial Organizations (AFL–CIO), Washington, D.C ..... 49

### WEDNESDAY, JUNE 29, 1983

Hamilton, Hon. Lee H., vice chairman of the Joint Economic Committee: Opening statement ..... 97
Bedell, Hon. Berkley, a U.S. Representative in Congress from the Sixth Congressional District of the State of Iowa ..... 98
Eads, George C., professor, School of Public Affairs, University of Maryland, College Park, Md ..... 102
Rostow, Walt W., professor of economics and history, University of Texas, Austin, Tex ..... 129
Eisner, Robert, William R. Kenan Professor of Economics, Northwestern University, Evanston, Ill ..... 204

### THURSDAY, JUNE 30, 1983

Hamilton, Hon. Lee H., vice chairman of the Joint Economic Committee: Opening statement ..... 257
Lundine, Hon. Stanley N., a U.S. Representative in Congress from the 34th Congressional District of the State of New York ..... 258
Jasinowski, Jerry J., senior vice president and chief economist, National Association of Manufacturers, Washington, D.C ..... 277
Noyce, Robert N., vice chairman of the board, Intel Corp., Santa Clara, Calif., and chairman, Semiconductor Industry Association ..... 312

## SUBMISSIONS FOR THE RECORD

### FRIDAY, JUNE 24, 1983

Albertine, John M.: Prepared statement ..... 6
Oswald, Rudolph: Prepared statement ..... 52
Roberts, Paul Craig: Prepared statement ..... 40
Samuelson, Paul A.:
  Prepared statement ..... 25
  Article entitled "International Trade for a Rich Country" ..... 27
  Paper entitled "To Protect Manufacturing?" ..... 74

WEDNESDAY, JUNE 29, 1983

Page
Eads, George C.: Prepared statement ... 107
Eisner, Robert:
  Prepared statement ... 211
  Article entitled "Differential Impacts of Tax Incentives for Investment" ... 227
Rostow, Walt W.: Chapter 6 from a book entitled "The Barbaric Counter-Revolution: Cause and Cure" ... 130

THURSDAY, JUNE 30, 1983

Jasinowski, Jerry J.: Prepared statement ... 281
Lundine, Hon. Stanley N.: Prepared statement ... 261
Noyce, Robert N.: Prepared statement ... 317

# INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

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**FRIDAY, JUNE 24, 1983**

Congress of the United States,
Joint Economic Committee,
*Washington, D.C.*

The committee met, pursuant to notice, at 9:59 a.m., in room 2255, Rayburn House Office Building, Hon. Dan Lungren (member of the committee) presiding.

Present: Representatives Lungren and Scheuer.

Also present: Charles H. Bradford, assistant director; and Mark R. Policinski and Robert Premus, professional staff members.

## OPENING STATEMENT OF REPRESENTATIVE LUNGREN, PRESIDING

Representative Lungren. First of all, I want to welcome all of you here, particularly the distinguished panel of witnesses, as today we are considering the most dynamic, new idea in economics, at least in a political sense, industrial policy.

I understand that Professor Samuelson has to leave no later than 11:20 a.m.

I would hope that we could get one thing clear from the start—that this could be a revolutionary idea that we are talking about in Washington. As advocated by some, industrial policy for the 1980's is far different from our present form of economic policy. It would be, as defined by some, a large departure from our present course, so large that I believe it would also require basic change in some of the political structures of the country.

Though understanding of industrial policy suffers because advocates cannot seem to agree on a definition of what it really is in a political sense, an unclear understanding of industrial policy appears to give advocates an advantage. They can promise many things to many people.

The hearings that we initiate today will provide a better definition of industrial policy, at least that is our hope. In turn, this will help us determine if industrial policy is a miracle cure or snake oil or something in between.

Certainly, the decline of the American economy from 1979 until last year weakened our basic manufacturing might. Our ability to compete in world markets was diminished during this 3-year economic decline. And I think one of the charges of this committee in these hearings would be our determination if the damage done by the 1970's high inflation and decline in productivity was so severe, that the recovery will not sufficiently cure our basic ills. If not, of course, then we must look for additional answers. We must consider more traditional cures like tax cuts, but we must also at least consider radical notions such as industrial policy as defined by some.

The Joint Economic Committee is ideally suited to hold hearings on this issue. As a nonlegislative committee, we are able to take a detached and broad look at the structural shifts in the U.S. economy, where we're heading and what role the Government should play in coping with structural changes. And in the process, we will not be tied to or swayed by any specific legislative proposals that might be forthcoming from a legislative committee, or if this were a legislative committee.

Be assured that the Joint Economic Committee will not rush to judgment on industrial policy. The Nation, I believe, is ill-served by anything less than a full disclosure of what industrial policy really is and what it will do to our economy and our society.

The six hearings that this committee will hold on industrial policy will establish, hopefully, the truth and explode some of the myths of this issue. In particular, this factfinding will be important when we hold hearings on Japanese industrial policy. Japan is actually the catalyst and the example for advocating an industrial policy by many in this body.

I know that we will get at the real truth or truths of this issue in these hearings because the entire membership of the Joint Economic Committee, Republican, Democratic, conservative and liberal, has determined that we will have bipartisan hearings that will analyze both or all sides.

In this regard, I commend Chairman Jepsen, Vice Chairman Hamilton, and the ranking member, Representative Chalmers Wylie, for their efforts to have a unified effort on these hearings.

I am also confident that we will succeed in improving the public's understanding of industrial policy because of distinguished witnesses like those before us today. This panel represents not only a broad range of viewpoints, but more importantly, a great depth of knowledge that will serve this Congress well.

I might just say to those who are appearing before us, I'm sorry that I don't have more colleagues here. We were supposed to be in session today and, as you know, that tends to have more members here. On the plus side, since we're not in session, we will not be interrupted by those bells that keep going off when we're trying to do something which break our train of thought.

If you will help us, I would ask that we might try and confine the initial remarks to 10 minutes apiece and then go into questions and answers. I would hope that we would get a good exchange from all of you on the questions so that we can see the various points of view on the question of industrial policy. And I will just simply start from left to right, and first, welcome John M. Albertine, president of the American Business Conference, and suggest that your prepared statement will be made part of the record and ask that you proceed as you wish.

## STATEMENT OF JOHN M. ALBERTINE, PRESIDENT, AMERICAN BUSINESS CONFERENCE, WASHINGTON, D.C.

Mr. ALBERTINE. Thank you, Congressman. I would like to submit my prepared statement for the record and just simply make several brief remarks with respect to this issue.

Let me say, first, that I think you're absolutely correct. I am obviously biased—well, maybe not so obviously biased—but I am biased. I think that this committee, in fact, is the most important committee in the Congress of the United States because, one, it doesn't enact laws. [Laughter.] It's the only committee in the Congress of the United States that has the time and the expertise to think through some of the initiatives that some of the other legislative committees in the Congress are doing. I feel very strongly that this committee has a very vital role to play. And I really, sincerely mean that. I think it's the most important committee in the Congress.

I am president of the American Business Conference, which is an organization of the chief executive officers of 100 mid-size, high growth companies. We define mid-size as $25 million to $1 billion in annual sales. We define high growth as each company at least doubling in size in the last 5 years. These are some of the most entrepreneurial companies in America. They also are companies that represent the full spectrum of American industry. We have firms in the high tech sector; in manufacturing, in the service sector, in financial services, and in the energy industry.

What they have in common is that they are quite excellent companies.

Let me just make three or four comments, if I can, about this whole issue of industrial policy which I have thought about over a number of years. In 1978 and 1979, when I was a member of the staff of this distinguished committee, there was an awful lot of discussion about industrial policy. The election of Ronald Reagan really ended the discussion. As you suggest, Congressman, the relatively poor performance of the American economy in the last few years has revived the issue, and now, the question of industrial policy is all the rage. In fact, if the issue of industrial policy went away, all those people who attend parties at Governor and Pamela Harriman's house would have nothing to talk about.

It's all the rage in Washington and I would like to address two or three issues with respect to industrial policy, whatever that means.

First, there is this notion that somehow, we need to develop governmental institutions in this economy to pick winners. Proponents claim that we ought to set up mechanisms, perhaps industrial banks or entrepreneurial banks which are supposed to scout out entrepreneurs, find people with cutting edge ideas, and target those people and those great ideas which will lead to industries of the future. By targeting those budding entrepreneurs with loans and loan guarantees, for a few dollar expenditures on budget and a few off-budget expenditures, the proponents expect that we would have all sorts of new industries in the future.

I think this represents the worst possible industrial policy idea, Congressman. The fact of the matter is that what Government clearly should not do is what the private sector does well now. And I think, unambiguously, the private sector picks winners very well. The firms that I represent are firms that were started by entrepreneurs who raised money at a time when raising money was not all that easy. But the situation currently described to me by all of the people that I know in the venture capital business is that there is venture capital coming out of people's ears. There is no lack of money. There is no lack also of entrepreneurs who want to start businesses. Everybody I know is starting a business. I know that Rudy Oswald is trying to figure out how to take the AFL-CIO public. [Laughter.]

So I think this notion of picking winners is a silly idea and we ought not to go down that road.

The second principle that I would like to discuss with respect to this is this whole question that the Federal Government is capable of targeting anything, that this political system can make judgments on the basis of objective analytical data.

Let me say that if the Congress of the United States were to go ahead and set up industrial banks for the purposes of picking winners, I know that much of your staff would wind up resigning and going into business with me. We would lobby this Congress—the Members that we know. We know that there are opportunities when Members of the Senate and the House can call over to the White House and tell the President that there are friends of his or hers that have great ideas and if you want that vote on AWAC's, you'd better call the Richmond Entrepreneurial Bank so that they can see the light of these wonderful ideas.

So that the notion that the Congress is capable of targeting simply, in my judgment, is incorrect. If you remember, for example, the Economic Development Administration was started in 1961 by the Kennedy administration for purposes of targeting loans and loan guarantees for infrastructure improvement in areas of the country which were so-called depressed and distressed. The idea was that you would help only those distressed areas.

Under the basic EDA program in 1961, 15 percent of the country's counties qualified. By the time the Carter administration came into power, it was about 85 percent. And I misspent my youth in a bunch of offices in the Congress of the United States trying to raise that percentage. When the Carter administration left, it was about 93 percent.

So the notion that somehow this Government is capable of targeting on the basis of analytical and objective data, I think, has simply not been our experience in the past.

There is a fairly new justification which I have read about and which has been presented to the Congress with respect to setting up an institutional arrangement for industrial policy. The justification is the need—people have now discovered that the market system really does pick winners and actually, the market system identifies losers fairly well. What happens when the market system identifies losers is the losers tend to organize themselves and come to the Congress and try to prevent resources from moving out of their sectors of the economy.

One of the justifications for the need for an industrial policy is that we need an institutional mechanism which would lobby the Congress or which would facilitate the movement of resources from declining to expanding sectors of the economy.

Now, if I walked up to the top of this building and jumped off, there's some probability, however small, that I'd go up and not down. That probability is higher than the probability that any lobbyist will ever come to the Congress of the United States for the purpose of asking the Congress of the United States to move resources out of his or her sector of the economy. That justification seems to me to be absolutely silly. The fact of the matter is that the grave danger implicit in setting up new institutions is that they will, in fact, be captured by those who don't want resources to move out of the declining sectors of the economy. In fact, if we had had an industrial policy 100 years ago, I probably today would be president of the buggy whip manufacturers association, and I would be here lobbying for why we need to keep resources in that industry, probably for national security purposes.

Finally, let me say, Congressman, that this other issue with respect to setting up a Reconstruction Finance Corp. with a huge amount of money—$90 billion or $100 billion or $150 billion, or whatever the numbers are, at least has the advantage of being fairly straightforward. That idea is designed to try to revitalize the declining basic industries in the United States.

We are, of course, opposed to it. We think that would generate an awful lot of government activity. It would also generate, in our view, a strong desire for protectionism, a sort of aging infant industry argument, that while revitalization was occurring, we needed to protect those industries.

I might say, Congressman, that those of us who represent firms that are growing would be in the Congress lobbying to get our piece of the action so it would not just go, I can almost guarantee, to the declining sectors of the economy.

In sum, those are some of the ideas that we have heard about that we think are very bad ideas. We think that the correct industrial policy is for government to create the proper climate, the general macroeconomic climate, where growth is possible. It might be a good idea for policymakers to sit down and look at the various governmental policies which are roadblocks to economic growth and try to eliminate those roadblocks.

But, Congressman, we think that the ideas that we have heard with respect to industrial policy would not improve the current situation at all.

Thank you, Congressman.

[The prepared statement of Mr. Albertine follows:]

## Prepared Statement of John M. Albertine

Good morning!

It is a pleasure to be here this morning, before this august Committee, to testify on industrial policy. We all know what a popular prescription "industrial policy" has become in Washington these days. Everyone is talking about picking winners or setting up a new Reconstruction Finance Corporation. In fact, without industrial policy, Pamela Harriman's guests would have nothing to talk about.

The truth of the matter is that industrial policy is not a new idea. We have had an implicit industrial policy in the guise of an informal set of tax, economic, and regulatory guidelines since World War II. The problem is that our industrial policy hasn't been very good. In fact, it has, more often than not, been totally irrational. There have been tremendous weaknesses

IN THE WAYS IN WHICH OUR TAX LAWS, REGULATORY POLICIES AND ECONOMIC PROGRAMS HAVE INTERACTED. THEY HAVE CONSPIRED TO GIVE US AN INDUSTRIAL POLICY THAT HAS THWARTED GROWTH MORE OFTEN THAN IT HAS ENCOURAGED IT.

## THE WRONG APPROACH

SOME BELIEVE THAT WE SHOULD TAKE AN INTERVENTIONIST APPROACH TO INDUSTRIAL POLICY. THEY BELIEVE THAT THE GOVERNMENT SHOULD PICK PROSPECTIVE WINNER INDUSTRIES IN OUR ECONOMY AND CODDLE THEM UNTIL THEY BOOM. I AM COMPLETELY OPPOSED TO THIS STRATEGY, BECAUSE I THINK IT TAKES A NAIVE VIEW OF HOW THE POLITICAL PROCESS WORKS IN AMERICA TODAY.

FIRST OF ALL, IT WOULD BE IMPOSSIBLE TO DEPOLITICIZE THE PROCESS OF PICKING THE WINNERS. NO MATTER WHAT SAINTS AND VIRGINS WERE HIRED TO MAKE THE DECISIONS, POLITICS WOULD EVENTUALLY COME INTO PLAY. SOME CLAIM THAT NO ONE WOULD EVER TRY TO POLITICIZE SOMETHING AS IMPORTANT AS OUR NATIONAL INDUSTRIAL POLICY -- JUST LIKE NO ONE'S EVER TRIED TO SIPHON OUR DEFENSE DOLLARS FOR PORK BARREL PROJECTS.

SECONDLY, THE GOVERNMENT CAN'T MAKE A DECISION QUICKLY. THE FEDERAL GOVERNMENT DOESN'T DO ANYTHING QUICKLY. THEY CAN'T EVEN DELIVER THE MAIL QUICKLY. THE VENTURE CAPITAL MARKET CAN MAKE DECISIONS MUCH MORE RAPIDLY.

THIRD, HOWEVER WELL INTENTIONED, THE GOVERNMENT IS WRONG A LOT. WHEN VENTURE CAPITALISTS ARE WRONG THEY CUT THEIR LOSSES AND MOVE ON. IF THE FEDERAL GOVERNMENT MADE A MISTAKE IT WOULD GO UNDISCOVERED FOR A LONG TIME, BECAUSE NO ONE WOULD TAKE THE BLAME. EVERYONE INVOLVED WOULD CLAIM THAT IT WASN'T REALLY A MISTAKE AFTER ALL. THEN, CONGRESS WOULD HOLD HEARINGS. WHEN THE EXECUTIVE AND LEGISLATIVE BRANCHES FINALLY AGREED, THE LAWSUITS WOULD START.

WE ARE THE WORLD'S MOST LITIGIOUS SOCIETY. IF THE GOVERNMENT HAD BEEN PICKING WINNERS FOR THE LAST CENTURY, BELIEVE ME, THE APPEALS OF THE BUGGY WHIP MANUFACTURERS WOULD STILL BE BEFORE THE SUPREME COURT.

Rather than an interventionist industrial policy, I think we would be much better off with one which allows the market to make most of the decisions. But, let's look at the roots of our economic problems before I discuss a cure.

## Our Major Economic Problem is Poor Productivity Performance!

Sluggish productivity growth is the cause of the malaise which descended upon our economy in the early seventies. It has led to high inflation; it has eroded real incomes; it has increased unemployment; it has weakened our trade balance. Our standard of living has suffered as a result of weak productivity.

Our poor productivity performance during the last decade can be attributed to the confluence of demographic changes and tax policies that discouraged capital formation. According to a recent study by this very Committee, the capital/labor ratio is the key explanatory variable in the productivity equation.

THE INDEX OF THE CAPITAL/LABOR RATIO DECLINED STEADILY THROUGHOUT THE 1970'S. THERE WERE TWO REASONS FOR THIS TREND. FIRST, A RECORD NUMBER OF PEOPLE, ABOUT 22 MILLION, ENTERED THE LABOR FORCE IN THE 1970'S. THIS EXPANSION IN THE LABOR FORCE WAS THE RESULT OF THE POST-WAR BABY BOOM AND THE MORE ACTIVE ROLE OF WORKING WOMEN. SECOND, THE RATE OF GROWTH OF CAPITAL FORMATION DID NOT KEEP PACE WITH THE GROWTH IN THE LABOR FORCE. INDEED, IN THE SEVENTIES, THE U.S. INVESTED A SMALLER PERCENTAGE OF ITS GNP THAN ITS MAJOR TRADING PARTNERS. AS A RESULT, U.S. WORKERS, ON AVERAGE, HAD LESS CAPITAL AT THEIR DISPOSAL. THE REASONS FOR THIS CAPITAL INSUFFICIENCY ARE COMPLEX, BUT TAX POLICY IS ONE OF THE MAIN CULPRITS.

TRADITIONALLY, THE DESIRE TO PRODUCE "TAX EQUITY" HAS DRIVEN THE CONGRESSIONAL TAX WRITING COMMITTEES. THEY REVISED THE GRADUATED INCOME TAX SYSTEM IN ORDER TO GRADUALLY EQUALIZE THE AFTER-TAX INCOME OF ALL AMERICANS. THIS PHILOSOPHY PRODUCED A TAX SYSTEM WITH HIGH MARGINAL RATES AND AN INHERENT BIAS AGAINST SAVINGS AND INVESTMENT. INCOME PRODUCED BY THRIFT AND RISK-TAKING

WAS LABELED "UNEARNED" AND TAXED AT ESSENTIALLY CONFISCATORY RATES. PRE-1981 TAX POLICY FAVORED CONSUMPTION AT THE EXPENSE OF SAVINGS AND INVESTMENT. IT WAS A KEY COMPONENT OF THE IRRATIONAL INDUSTRIAL POLICY OF THE POSTWAR ERA.

## THE ERTA EXPERIENCE

SINCE LOW PRODUCTIVITY WAS CORRECTLY VIEWED AS THE UNDERLYING CAUSE OF OUR ECONOMIC DISTRESS, IN 1981 ECONOMIC POLICY DID AN ABOUT FACE. TAX POLICIES WERE CHANGED TO SPUR INVESTMENT, PARTICULARLY IN THE LARGE, CAPITAL-INTENSIVE INDUSTRIES SUCH AS AUTOS, STEEL, AND HEAVY MANUFACTURING, WHICH DOMINATED THE AMERICAN ECONOMY IN THE FIRST HALF OF THE TWENTIETH CENTURY. THE PENALTIES FOR SAVINGS AND INVESTMENT WERE FINALLY REDUCED, HOWEVER SLIGHTLY.

THE ECONOMIC RECOVERY TAX ACT OF 1981 FAVORED GENERAL CAPITAL FORMATION. A CONSENSUS AMONG POLICYMAKERS MADE THE LIBERALIZATION AND SIMPLIFICATION OF DEPRECIATION THE TOP

PRIORITY. HOWEVER, DEPRECIATION REFORM WAS VIEWED AS INSUFFICIENT. THE LARGE, CAPITAL-INTENSIVE INDUSTRIES IN DECLINING SECTORS OF THE ECONOMY STILL HAD LARGE CONSTITUENCIES IN WASHINGTON. HENCE, THE RIGHT TO SELL TAX CREDITS WAS GIVEN TO FIRMS NOT PROFITABLE ENOUGH TO TAKE FULL ADVANTAGE OF THE NEW TAX BREAKS.

DESPITE ALL THE HOOPLA OVER ERTA, IT TURNED OUT TO HAVE VERY LITTLE IMPACT, BECAUSE THE HIGH INFLATION, LOW PRODUCTIVITY ECONOMIC POLICIES OF THE 1970'S FINALLY CAUGHT UP WITH US. INTEREST RATES SOARED AND COMPLETELY SWAMPED THE EFFECTS OF ERTA ON INVESTMENT. ERTA PRECIPITATED A DROP OF ONLY 1.2 PERCENTAGE POINTS IN THE TOTAL COST OF CAPITAL SERVICES FOR CORPORATIONS. THIS LED SOME TO CONCLUDE, INCORRECTLY, THAT INCREASING INCENTIVES WAS INSUFFICIENT AND LARGE SCALE INTERVENTION WOULD BE NECESSARY TO STIMULATE INVESTMENT.

## LOWER THE COST OF CAPITAL

NOW, I'M NOT SAYING THAT THERE IS NOTHING THE GOVERNMENT CAN DO TO LOWER THE ASTRONOMICALLY HIGH COST OF CAPITAL.

ONE OF THE MEMBERS OF THE AMERICAN BUSINESS CONFERENCE, DR. GEORGE HATSOPOULOS, RECENTLY COMPLETED WHAT I THINK IS A PATH-BREAKING STUDY ON THE COST OF CAPITAL. HIS STUDY SHOWED THAT THE COST OF CAPITAL IN THE U.S. IS MORE THAN THREE TIMES AS HIGH AS IN JAPAN.

THIS DIFFERENTIAL HAS IMPORTANT IMPLICATIONS FOR THE DEVELOPMENT OF THE HIGH TECHNOLOGY SECTOR, THE SECTOR UPON WHICH THE ATARI DEMOCRATS AND MANY OTHER AMERICANS ARE PINNING THEIR HOPES FOR AN AMERICAN ECONOMIC RESURGENCE. THE HATSOPOULOS STUDY SHOWS THAT FOR A PROJECT REQUIRING 5 YEARS OF DEVELOPMENT AND HAVING THE SAME PROBABILITY OF SUCCESS IN THE U.S. AS IN JAPAN, THE ENORMOUS DISPARITY IN THE COST OF CAPITAL WOULD MEAN THAT JAPAN COULD INVEST 2½ TIMES AS MUCH AS WOULD BE JUSTIFIABLE IN THE U.S. FOR A PROJECT REQUIRING TEN YEARS OF DEVELOPMENT, THE JAPANESE WOULD BE ABLE TO JUSTIFY SPENDING 5 TIMES AS MUCH AS THE

U.S., SOLELY ON THE BASIS OF LOWER COST OF CAPITAL. BECAUSE THE JAPANESE WILL BE ABLE TO UNDERTAKE MUCH MORE RESEARCH, UNDER CURRENT U.S. POLICIES, THE JAPANESE HIGH TECH SECTOR COULD COMPLETELY ECLIPSE OUR OWN.

HOWEVER, AMERICA'S COMPETITIVE EDGE COULD BE RESTORED BY POLICIES THAT MAKE THE U.S. COST OF CAPITAL COMPARABLE TO THAT OF THE JAPANESE. THE MOST EFFICIENT WAY TO DO THIS, IN LIGHT OF THE DIRE BUDGET SITUATION, WOULD BE TO REDUCE THE MARGINAL COST OF CAPITAL THROUGH TAX POLICIES THAT PERMIT INCREASED USE OF TAX-FAVORED SOURCES OF FINANCING. FOR EXAMPLE, IF DIVIDENDS PAID ON CUMULATIVE PREFERRED STOCK WERE TREATED AS TAX DEDUCTIBLE INTEREST PAYMENTS, THE COST OF CAPITAL TO PROFITABLE FIRMS COULD (BASED ON DATA FOR 1981) BE LOWERED FROM 18.8% TO 9.8%. I DON'T KNOW WHAT THE REVENUE LOSS WOULD BE, BUT I BET IT WOULD GENERATE MORE INVESTMENT PER DOLLAR THAN ANY OF THE OTHER PROPOSALS PRESENTED TODAY.

## More Efficient Investment

The quantity of investment is not the only issue -- the quality is important too. The U.S. not only underinvested in the 1970's, but it got less bang from its investment buck. While liberalized tax treatment should raise capital investment in the long run, it will not address the declining efficiency of investment. In a time of budget crisis, when tax incentives are increasingly hard to justify, we must make sure that our industrial policy, be it implicit or explicit, will deliver the greatest productivity enhancement possible for each dollar of tax incentive.

Nobel laureate Lawrence Klein of the University of Pennsylvania has developed a measure of the effectiveness of investment. Klein's concept is called the investment-efficiency ratio. It measures how much real growth the economy produces for each dollar invested. The higher the real growth produced by each investment dollar, the higher the investment-efficiency ratio for the economy.

ACCORDING TO PROFESSOR KLEIN'S FIGURES, THE RATIO OF REAL BUSINESS FIXED INVESTMENT TO REAL GROWTH IN G.N.P. WAS 30.2% DURING THE 1950'S. DURING THE NEXT DECADE, IT DECLINED SLIGHTLY TO 27.1%. BUT, IN THE 1970'S, THE INVESTMENT-EFFICIENCY RATIO DROPPED DRAMATICALLY -- TO 12.8%.

WHILE PART OF THE SOLUTION TO OUR PRODUCTIVITY PROBLEMS WILL COME THROUGH A GENERAL RE-ALLOCATION OF RESOURCES FROM CONSUMPTION TO SAVINGS AND INVESTMENT, WE MUST ENCOURAGE THE ALLOCATION OF RESOURCES TO THOSE FIRMS AND INDUSTRIES WHICH WILL USE THEM MOST EFFICIENTLY. WE MUST FACILITATE THE EXPANSION OF THE FIRMS OF THE FUTURE, RATHER THAN PROPPING UP DECLINING INDUSTRIES. MORE EFFICIENT USE OF OUR INVESTMENT RESOURCES WILL CREATE A STRONGER NATIONAL ECONOMY AND PROVIDE THE BEST MEANS OF OFFSETTING THE SERIOUS PROBLEMS ASSOCIATED WITH DECLINING INDUSTRIES.

## WHO ARE THE EFFICIENT INVESTORS?

HIGH GROWTH, MID-SIZE COMPANIES RUN BY ENTREPRENEURS SEEM TO FIT THE FORMULA FOR EFFICIENT INVESTORS. THESE "THRESHOLD" COMPANIES REPRESENT REAL, OLD-FASHIONED AMERICAN SUCCESS STORIES. YET, THE MEDIA IS MUCH MORE LIKELY TO TELL US ABOUT FACTORY CLOSINGS IN OHIO THAN ABOUT ENTREPRENEURIAL EXPANSION IN MASSACHUSETTS.

IN THE LAST 2½ YEARS, A GROUP OF THE CHIEF EXECUTIVE OFFICERS OF MID-SIZE, HIGH-GROWTH COMPANIES HAS BANDED TOGETHER TO FORM THE AMERICAN BUSINESS CONFERENCE. THEIR FIRMS EACH HAVE ANNUAL REVENUES BETWEEN $25 MILLION AND $1 BILLION AND HAVE DOUBLED IN SIZE OVER THE LAST FIVE YEARS.

THE MEMBER FIRMS OF THE ABC TYPIFY THE HIGH PERFORMANCE FIRMS WHICH UTILIZE RESOURCES MOST EFFICIENTLY. THE QUALITY OF THEIR PERFORMANCE RECORD IS PROOF THAT INVESTMENT IN THESE KINDS OF COMPANIES WILL HAVE HIGH PAYOFFS IN TERMS OF THE PRODUCTIVITY PERFORMANCE OF THE U.S. ECONOMY.

McKinsey and Company has studied the initial members of the American Business Conference and compared them to ten "excellent" companies in the Fortune 100. The ten were IBM, Procter and Gamble, 3M, Johnson and Johnson, Texas Instruments, Dana, Emerson Electric, Hewlett Packard, Digital Equipment, and McDonald's. McKinsey found that over a three year period, the ABC companies outperformed the excellent companies in key areas. Employment grew 66% faster in the ABC companies than in the "excellent" companies. This factor has important implications for providing jobs to workers displaced by the declining industries. Over the last three years, sales growth has been 49% faster in the ABC companies than in the excellent companies, and earnings per share have grown 43% faster.

Incredibly, these firms achieved these performance records despite higher effective tax rates and higher capital costs. McKinsey calculated that ABC firms pay effective tax rates of about 29.7%, while the 100 largest corporations have effective

TAX RATES OF 16%. McKINSEY ALSO CALCULATED THAT THE COST OF CAPITAL FOR MID-SIZE COMPANIES IS ROUGHLY 20% GREATER THAN THAT FOR LARGE FIRMS.

## HOW CAN INDUSTRIAL POLICY BE MORE EFFICIENT?

AN INDUSTRIAL POLICY WHICH PROVIDES INCENTIVES TO SHIFT RESOURCES FROM CONSUMPTION TO SAVINGS AND INVESTMENT WILL SLOWLY IMPROVE OUR NATION'S PRODUCTIVITY PERFORMANCE. AN INDUSTRIAL POLICY WHICH FURTHER REFINES THIS CONCEPT BY FOCUSING ON INCENTIVES FOR HIGH-EFFICIENCY INVESTMENTS IS LIKELY TO HAVE A HIGHER PRODUCTIVITY PAYOFF. THIS MEANS THAT WE SHOULD FAVOR THE REDUCTION OF THE CAPITAL GAINS TAX RATE FOR PRODUCTIVE INVESTMENTS OVER FURTHER LIBERALIZATION AND SIMPLIFICATION OF DEPRECIATION, AND WE SHOULD PREFER INCENTIVE STOCK OPTIONS TO SAFE HARBOR LEASING.

YET, OUR IMPLICIT INDUSTRIAL POLICY EXTENDS FAR BEYOND OUR TAX CODE. WE SHOULD EXAMINE OUR REGULATORY APPARATUS AND EXPORT PROMOTION PROGRAMS TO SEE HOW THEY AFFECT HIGH-GROWTH ENTREPRENEURIAL FIRMS. WE MUST REMOVE ROADBLOCKS TO ECONOMIC GROWTH.

This means procedural regulatory reform, rather than reform of individual statutes like the Clean Air Act. There is irrefutable evidence that entrepreneurs are methodically overwhelmed by the complexity of federal and state regulatory programs.

One positive step in the process of formulating an efficient industrial policy was the passage of the Export Trading Company Act last year. Programs like the ETC, not Exim Bank, assist high-efficiency investors.

Our tax code and regulatory apparatus create an implicit, de facto industrial policy regardless of whether Congress or the Administration desires one. In this time of budgetary cutbacks, our limited resources must be used as efficiently as possible. While there will inevitably be transitional disruptions in the short-term, it is time to change the focus of our industrial policy from shoring up our declining industries to stimulating our growing, mid-size firms.

OUR INDUSTRIAL POLICY MUST FAVOR EFFICIENT, PRODUCTIVITY-ENHANCING INVESTMENT. WE CAN NO LONGER AFFORD THE PRODUCTIVITY LOSSES ASSOCIATED WITH THE ANTI-INVESTMENT INDUSTRIAL POLICY OF THE SEVENTIES NOR THE SLOW RECOVERY IN PRODUCTIVITY WHICH WILL RESULT FROM THE GENERAL INVESTMENT POLICIES OF 1981. THE MARKET WORKS, AND WITH THE POLICIES THAT I HAVE OUTLINED HERE, WE CAN ALLOW IT TO WORK EVEN BETTER. THE ENGINE OF AMERICAN ECONOMIC GROWTH DOESN'T NEED A COMPLETE OVERHAUL. IT JUST NEEDS A LITTLE MORE FREE MARKET OIL.

THE INTERVENTIONIST INDUSTRIAL POLICIES DISCUSSED BY OTHERS ON THIS PANEL TODAY SOUND GREAT ON PAPER, BUT THEY WON'T WORK IN PRACTICE. WHAT WE SHOULD DO IS SYSTEMATICALLY REMOVE ROADBLOCKS TO ECONOMIC GROWTH. IF THE GOVERNMENT HAD BEGUN PICKING WINNERS WHEN INTERVENTIONIST INDUSTRIAL POLICIES WERE FIRST DISCUSSED, MY KIDS WOULD PROBABLY BE PLAYING WITH HULA HOOPS, INSTEAD OF COMPUTERS.

THANK YOU!

Representative **Lungren**. Thank you, Mr. Albertine.

Now we'll hear from another distinguished panelist, Prof. Paul Samuelson of the Massachusetts Institute of Technology. Thank you for coming and welcome.

Please proceed as you wish.

## STATEMENT OF PAUL A. SAMUELSON, PROFESSOR OF ECONOMICS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

Mr. **Samuelson**. A "new industrial policy" is still an advertising slogan looking for a product it seeks to sell. Yes; manufacturing jobs are leaving North America and Western Europe bound permanently for developing countries in the Pacific basin, such as South Korea, Hong Kong, Singapore, and Taiwan. The recent Reagan recession, like the Carter recession just before it, accentuates the transitional distress that goes along with this long-run process.

I believe it is correct to say that some of the people who lost their jobs in the last couple of years in the northeast part of the United States will never be going back to those jobs again, even if the present recovery is a stronger recovery than the evidence now suggests it will be. But it would be wrong to infer from that that it was the recession which caused the permanent loss of those jobs. And in the absence of the recession, that permanent loss would not have taken place.

The last little breeze drops the apples from the trees. But the apples that drop from the trees were the apples that were not well fastened on the trees.

Under a regime of free trade, long before these last two recessions, this trend toward, if you will, the deindustrialization of America had accelerated, and most experts must expect that it will still be the case even with a good recovery in the middle of the 1980's, that routine manufacturers will migrate from high wage to low wage regions.

We need to understand the deindustrialization of America to formulate a reindustrialization of America program. This shift in location of standardized manufacturing production is in accordance with fundamental economic law, not opposed to it. This shift is part of the process of what economists call dynamic comparative advantage. In our own country, for a century, routine manufacturing of textiles, shoes and machinery have moved from New England and the Northeastern States generally to the south and west, from higher wage, unionized regions to lower wage, nonunion regions.

Swedish manufacturing is feeling the same competitive pinch and Japan itself finds that its risen real wage level makes it mandatory for it to give up to developing nations the more easily imitated manufacturing activities.

Way back in 1972, I gave a lecture before the Swedish-American Chamber of Commerce that appears in the July 1972 edition of the Morgan Guaranty Survey, and I ask that article be placed in the record. It's entitled "International Trade for a Rich Country."

In that lecture, I thought I detected an acceleration of the trend that I have just been describing and predicted that it would accelerate still more in the future. That prediction, for better or worse, has turned out to be near the mark.

To say that a trend is in accordance with economic law is not to say that it is beneficent to all parties concerned. On the contrary, the workings out of dynamic comparative advantage can often be expected to benefit some sectors and economic interests and to hurt other sectors and interests. The gains of those who are helped generally, in some sense, which economists can quantify, do outweigh the losses of those who are hurt. But that is usually of not much comfort to the interests that are hurt.

Settling of the rich farmlands of the American West and the cheapening of transport hurt British landowners and farmers throughout the 19th century and permanently. The spread in improvement of technology in Japan and South Korea—I take those as archetypical cases—by cheapening many of the goods we import, tends to increase the American real wage and living standard.

There is, for the country regarded as a whole, a beneficent element in this working out of economic law. But, on the other hand, similar technological and cost improvements in those countries, if they take place in goods that we previously had a comparative advantage in for exporting, can well serve to lower the equilibrium level of American real wages and per capita GNP. That's to make the same point again that the workings out of fundamental economic law are not guaranteed if we simply respect what is happening in the free market to be of advantage to all important sectors of that free market.

Which of these two opposing effects, the beneficent and that harmful, is quantitatively the most important is not a question that even experts can agree on. It's not something that we could settle in a panel of informed people here in a morning like today.

It may well be the case that dynamic comparative advantage since World War II, particularly when it's been coupled with the increased competition with us for the scarce geological resources needed for a high modern standard of life, by a whole new sector of the world, of affluent industrialized peoples—it may be that that has served, on balance, to reduce the "net consumer surplus" that the United States enjoys from international trade.

What might be called a monopoly access, American workers historically enjoyed with respect to the most advanced knowledge, which was U.S. know-how and the most advanced managerial technology. Now that quasi-monopoly position of the American worker has been eroded by the spread of knowledge. That, of course, has been engineered by consulting firms, by multinational corporations, by textbook writers like myself, and by study in our universities by the best students from all over the rest of the world.

There's a further point that needs to be made. I can only make it briefly. Mr. Albertine is correct that there is at the moment a rage for venture capital. There is an awful lot of venture money in pools chasing too few deals and the deals are getting thinner and thinner.

But I believe it would not be correct to infer from that that American enterprise, in general, has access to plentiful capital. On the contrary, the U.S. economy is in this epoch a high real-rate-of-interest economy. You probably should have somebody introduce into the record the interesting study which was made just recently by George Hatsopoulos, not an economist, an eminent thermodynamicist, and the head of a thermoelectron corporation, a growing corporation. It probably has outgrown the American Business Conference——

Mr. **Albertine**. It's one of our members.

Mr. **Samuelson**. By the day after tomorrow, it will no longer be eligible. [Laughter.]

Mr. Hatsopoulos has done what we economists have failed to do—he has tried to make some very careful and canny calculations of what the true effective cost of capital is to American enterprise. And he's made a less sophisticated estimate of what that comparable cost of capital may be for some of our international competitors—notably Japan.

Representative **Lungren**. Professor Samuelson.

Mr. **Samuelson**. And I quote from——

Representative **Lungren**. The staff has reminded me that we had him testify before us 3 weeks ago with a number of the reports that you have suggested.

Mr. **Samuelson**. Right. So I'll simply summarize his finding, not as a definitive finding which has run the gauntlet of a referred peer group review—we know there is no better Supreme Court existing anywhere. But his finding is that the real cost of capital to American enterprise is now two to three times that of the Japanese cost of capital. Perhaps that is an upper bound for the problem.

I simply then want to go on to say what this means from the standpoint of economic analysis, and I'm now not talking about Keynesian economic analysis; I'm talking about old-fashioned, neoclassical economic analysis. The higher the real rate of interest in an economy for the same technology, the lower must be the equilibrium market real wage which can be sustained in that economy. And for the deindustrialization of America, particularly the migration of manufacturing, this is a very crucial factor of diagnosis which any purported scheme of therapy should take into account.

But for the sake of making the argument clear cut, let us stipulate, as the lawyers say, that the effects of dynamic comparative advantage as they have been developing in the last decades, on the whole, had a harmful effect that outweighed the beneficial effects.

What, then, follows for therapy? Even if the free trade winds have served to slow down our potential rate of productivity and real wage growth, it does not follow that recourse to protection can help out the situation. There are economists in Great Britain, particularly associated with Cambridge University—I have in mind Nicholas Kaldor and other economists of the British Labor Party, who tried to make out a case that protection is the solution for the problem that Western Europe faces and North America faces.

I do not believe that the evidence will sustain that conclusion and my analogy would be, although the analogy itself proves nothing, that when lightning hits you, it may still be the case that shooting yourself in the foot will leave you still worse off. [Laughter.]

The temptation to hold onto jobs that are being competitively bid away is politically very strong. That's why we're here. That's why there's a discussion of reindustrialization of America. And now to keep my statement very brief, let me say that often what such protection would involve is a subsidy by the median American workers, those in the middle, those who earn somewhere in the vicinity of $10 an hour, counting in fringe, to the aristocrats of the labor market, those who, not infrequently, under collective bargaining, are earning over $20 an hour in real wages and fringes—most notably in the automobile and the steel industry. To have the weak subsidize the strong, to have the median subsidize the elite is in this case not good microeconomics. It's not good macroeconomics. And I don't think it's defensible social philosophy.

Thank you.

Representative LUNGREN. Thank you very much, Professor.

[The prepared statement of Mr. Samuelson, together with the article referred to, follows:]

### PREPARED STATEMENT OF PAUL A. SAMUELSON

A "new industrial policy" is still an advertising slogan looking for the product it seeks to sell. Yes, manufacturing jobs are leaving North America and Western Europe bound permanently for developing countries in the Pacific Basin such as South Korea, Hong Kong, Singapore, and Taiwan. The recent Reagan recession, like the Carter recession before it, accentuate the transitional distress that goes along with this longrun process. However, under a regime of free trade, long before these recessions, this trend had accelerated; and even if we have a better recovery in the mid-eighties than most experts have expected it will still be the case that routine manufactures will migrate from high-wage to low-wage countries. We need to understand the "deindustrialization of America" to formulate a "reindustrialization of America" program.

This shift in location of standardized manufacturing production is in accordance with fundamental economic law, not opposed to it. This shift is part of the process of dynamic comparative advantage. In our own country, for a century routine manufacturing of textiles, shoes, and machinery have moved from New England and the North Eastern states generally to the South and West—from higher-wage unionized regions to lower-wage nonunion regions. Swedish manufacturing is feeling the same competitive pinch, and Japan itself finds that its risen real wage level makes it mandatory for it to give up to developing nations the more easily imitated manufacturing activities.

More than a dozen years ago in my little Nobel lecture, which I shall have entered into the Congressional Record, I detected an acceleration of this trend and predicted that it would accelerate still more in the future. That prediction has turned out to be near the mark.

To say that a trend is in accordance with economic law is not to say that it is beneficent to all parties concerned. On the contrary the workings out of dynamic comparative advantage can often be expected to benefit some sectors and economic interests and to hurt other sectors and interests: the gains of those who are helped generally outweigh the losses of those who are hurt, but that is usually of not much comfort to the interests that are hurt. Settling of the rich farm lands of the American West and the cheapening of transport hurt British landowners and farmers throughout the nineteenth century.

The spread and improvement of technology in Japan and South Korea, by cheapening many of the goods we import, tends to increase the American real wage and living standard. On the other hand, similar technological and cost improvements there in the goods that we previously had a comparative advantage in for exporting can well serve to lower the equilibrium level of American real wages and per capita GNP. Which of these two opposing effects is quantitatively the more important is not a question that even experts can agree on. It may well be the case that dynamic comparative advantage since World War II, particularly when it is coupled with the increased competition with us for the scarce geologic resources needed for a high modern standard of life, has served to reduce the net consumers surplus that the United States enjoys from international trade as the monopoly access that American workers enjoyed with respect to advanced U.S. knowhow and managerial technology has been eroded by the spread of knowledge engineered by consulting firms, multinational corporations, textbook dissemination and study in universities of the advanced world. We are a high real-rate-of-interest economy, not a low one, and for the same technology that entails lower real wage rates.

But even if the free winds have served to slow down our potential rates of productivity and wage growth, it does not follow that recourse to protection can help out the situation. When lightning hits you, it may still be the case that shooting yourself in the foot will leave you still worse off.

The temptation to hold onto jobs that are being competitively bid away is politically very strong. Often, what protection involves is a subsidy by the median American workers who earn $10 an hour or less compared to the aristocrats of the labor market who under collective bargaining earn over $20 in the auto and steel industries. That is not good microeconomics, or macroeconomics, or defensible social philosophy.

# International Trade for a Rich Country

*The following article was written by Professor Paul A. Samuelson of the Massachusetts Institute of Technology. The article is adapted from a lecture Dr. Samuelson gave before the Swedish-American Chamber of Commerce in New York City on May 10 of this year at a meeting commemorating his receipt of the 1970 Alfred Nobel Memorial Award in Economic Science.* Copyright © 1972 by Paul A. Samuelson.

THE topic I propose to think about today is the future of American international trade and finance, with special emphasis on how that future is likely to be conditioned by the fact that North Americans enjoy the highest per-capita standard of living on earth. The topic has an obvious interest for all of Western Europe and Australasia, since these continents are in second place and are rapidly closing the "real" wage gap with the United States. The far-seeing Japanese, who have the right to dream at night of that approaching date when their rapidly growing per-capita real wages will equal and surpass our own, also have a natural interest in the same subject.

For, as I never tire of preaching abroad, the American pattern of things has a vital interest—not because there is anything special about being American, but because what one fool will choose to do at a high real income level so will another. The Americanization of Europe has little to do with forced infection imported from America: it is simply that everybody who gets to a real income of two or three thousand dollars a year per family member will want a car, a telephone, automatic heat, a winter vacation, and all the things that Americans by accident happened to have the opportunity to enjoy first. Our economy, so to speak, is an analogue computer showing others the shadow of their own futures. For better or for worse, I must add.

As Samuel Butler said, there is always a certain lack of amiability about the go-getter. Admiration and fear aside, we tend to like an individual in inverse relation to his ability to survive in the struggle for success. If it is natural to expect a class struggle within a country based on differences in income and wealth, why is it not natural to expect international antagonisms based on the same economic disparities? If the class struggle had never existed, we should have had to invent it in order to explain the facts of modern life.

But what has all this to do with economics? In classical competitive equilibrium, there is precious little room for the sociology of class warfare. Impersonal supply and demand dictate the final equilibrium. If in any sense there is personal rivalry of brother against brother, the form it takes in a competitive market is the substitutability of one identical worker against the other. The class struggle is an intraclass struggle, labor against labor in depressing the market wage, capitalist against capitalist in raising the real wage, depressing commodity prices and the rate of profit.

When Ricardo laid the foundations for the theory of international trade, in the form of the famous doctrine of comparative costs or comparative advantage, there was no particular role played by the *relative affluences* of the trading regions. What about the brute fact of *size*, that the United States aside from having the highest per-capita income also has been one of the economies of greatest land area and population? Herein we differ from Sweden or Switzerland, in the same way that half a century ago the huge areas of Brazil and Argentina differed from the affluent "Switzerland of Latin America," Uruguay.

Mere size does not mean per-capita affluence. Indeed, as the teeming millions of India and China illustrate, large absolute numbers when not matched by commensurate magnitudes of resources make for low productivity and poverty. As Adam Smith and Bertil Ohlin have emphasized, mere size may indeed be beneficial to the extent that it permits industries or society to realize the economies of mass production and scale that characterize many industrial processes. Increasing the extent of the market has always been a powerful argument in the arsenal of the free trader. The Common Market is important to Western Europe in giving it the kinds of mass markets that the vast American continent has long enjoyed.

Nonetheless, once markets are large enough to afford competition among many efficient-scale producers, size ceases to be an important variable in the models of conventional international trade theorists. Thus, few of them would agree with the contention of Oxford's Lord Balogh that small economies are at a disadvantage trading with the large United States–provided that the collusive power of concerted governmental action is not pursued by America.*

In summary, as far as competitive international trade analysis is concerned, there is no reason why mutually profitable trade should not take place between affluent countries or regions like America, Sweden, Australia, Western Europe, among themselves, and between any of them and intermediate-income or underdeveloped nations–such as the countries of Latin America, Africa, Asia, and for that matter Eastern Europe (provided the latter group's control authorities agree to balanced trade and follow the principle of importing those goods that can less cheaply be produced at home).

There is not unanimous agreement with these doctrines of classical and post-Keynesian establishment economics. My purpose here today is to subject them to searching reevaluation. Let me confess that my bias in the effort is to see whether I cannot find some merit in the suspicions and apprehensions of those who doubt and criticize the conventional wisdom.

To bring out the issues in the debate, let me state rather boldly and crudely an overly complacent, optimistic view of the world that might be taken by someone strongly enamored of the classical doctrine of international trade. Then, as fairly as I can, let me state what are some of the dire views and apprehensions of that larger fraction of the world who have not had a formal grounding in the theories of classical and neoclassical economics.

## *Optimistic conventional views*

For brevity, here is a dogmatic list of the major points the optimist would stress:

1. In a very special sense, the dollar has been a *key* international currency. Just as a sovereign government can issue money *ad lib* within a country and have it be acceptable (although, to be sure, at the cost of raising all prices), so the United States had in a sense the privilege of a counterfeiter. Therefore, by definition, we were hardly capable of running an international deficit since these deficits would *automatically* be financed by foreigners' accepting whatever dollars were thrust upon them. The dollar was, so to speak, not merely as good as gold: it was

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* Actually, in the comparative advantage theory of Ricardo and Mill, small Portugal stands to gain a larger share of the advantage from international specialization than large England. Indeed, if English consumers are so numerous that their needs for Portugal's export goods have to be filled in part from domestic English production, Portugal gets 100% of the gains from trade and England gets none. Under perfect competition smallness makes for rarity and advantage; largeness is a disadvantage.

better than gold, particularly if the U.S. showed its determination to get rid of gold as an element in the international monetary system by dumping our Fort Knox supply on the market for whatever price below the official price of $35 an ounce it would fetch from dentists, jewelers, and hoarders.

2. Although in the historic past America was a high-tariff country—as in the Smoot-Hawley 1930 Act—under four decades of Reciprocal Trade Programs our duties have been cut in half, cut again, and still again in half. As a result, though we are often regarded abroad as still being a protected market, this is only because of a recognition lag: *America has become one of the freest markets in the world,* which is to the advantage both of our workers and of workers abroad. The substantial penetration of the American market by Japanese imports in the last two decades would be proof of this basic fact. (It may be added that, until recently, the endemic protectionist ideology of the American public had gradually been succeeded by a freer-trade ideology.)

3. Within the framework of the beneficial free-trade regime of the Bretton Woods system, even some optimists would admit that *the American dollar had prior to August 1965 become somewhat "overvalued."* To a greater number, overvaluation is merely a consequence of the post-1965 acceleration of the Vietnam war with its subsequent demand-pull and cost-push inflations. (Parenthetically, I might just note that to me the overvaluation of the American dollar has been a longer-term phenomenon, related to the miraculous recovery of Western Europe and Japan after the 1949 devaluations, to foreign investment desires of our corporations, and to the expenditures and gifts of the United States in the Korean, Indochinese, and general cold-war efforts.)

4. Even if the dollar should turn out to be somewhat overvalued, this primarily *puts the onus on the surplus countries to appreciate their currencies unilaterally*—particularly the mark and the yen. Or else they should swallow our dollars of deficit without complaining. (Running contrary to this comfortable optimist's policy of "benign neglect," enunciated both by conservatives and liberals among American economists, was the recognition by some of us that the regime of swallowing dollars could not be expected to last; and that, therefore, putting off the day of disequilibrium correction would only exacerbate the inevitable process of needed readjustment.)

5. The true optimists held that *any overvaluation* of the dollar, even if it were fairly substantial, and more or less independently of its cause, *could be cured by the medicine of dollar depreciation or surplus-currency appreciation along the lines of the actual December 1971 Smithsonian Agreement in Washington.* Under the two-tier gold system, the free price of gold in the unofficial tier was of no importance; and within the official tier the only point in making a token upward revaluation of the dollar price of gold and SDRs was for the purpose of expediting agreement on new currency parities with lower dollar parities.

Since the dollar depreciation in December 1971 was substantial, averaging 12% relative to other currencies, these "elasticity optimists" think that the therapy agreed upon in Washington should be ample to restore equilibrium in the reasonably near future. Indeed, some believe that even slight reductions in our export prices relative to prices of exports abroad will trigger great improvement in our current credits and great improvement in our current debits; and these "elasticity superoptimists" have even been fearful that the dollar was depreciated too much in 1971 and will eventually prove to be an undervalued currency.

6. To such optimists as these, perhaps the whole August 15, 1971 crisis was unnecessary, being in the nature of an optical illusion, or being merely the self-fulfilling consequence of an irrational avalanche of speculation against the dollar. Likewise, they tend to view the war of nerves that has been going on in the first half year following the Washington Agreement of last December as an irrational movement likely to come soon to an end. Or, if irrationality should carry the day, that will be an unfortunate and basically unnecessary outcome.

7. The fatal flaw of the Bretton Woods setup —its attempt to peg exchange rates—should be removed in favor of either (1) some kind of *gliding band*, in which parities can move up or down a few percentage points each year or (2) some scheme of relatively clean *floating* exchange rates, in which organized speculative markets will give exporters protection against fluctuating exchange risks and in which no deficits will ever again be possible.

8. Finally, with exchange rates flexible and with tariffs, import quotas, and other protective devices gradually removed, the American real wage will benefit in its rate of growth and the same will take place abroad, as everyone everywhere benefits from a more efficient international division of labor.

To be sure, in the ebb and flow of relative technological change and change in tastes, certain specialized workers within a country might find that their scarcity rents deteriorate when foreign competition takes away much of their advantage. And the same can happen to the rents enjoyed by capital and nonlabor resources situated in sectors no longer viable in the face of international competition. However, provided the country follows proper post-Keynesian fiscal and monetary policies, it should be able to ensure full-employment job opportunities for all. Displaced workers and machines will go into other lines of activity in which the country still has a comparative advantage, to the benefit of the real GNP and its broad factor-share claimants.

## *Economic scares*

I've now stated the optimists' case. Listen to it and you will not think of economics as the dismal science. Quite the contrary. One of the functions of economic analysis has been to rid people of their economic scares. All that I can say is that there are plenty of scares in the present age, and economics has its work cut out for it if it is going to rid people of their fears. It was the Duke of Wellington who said: "I don't know whether my officers scare the enemy, but they sure as hell scare me." Well I am a sophisticated economist but I must confess to some apprehensions about the future of the American balance of payments and about the effects of future foreign trade developments on the average level of American real wages and living standards.

We live in the age of Freud. Now we know that often our anxieties are nameless dreads, and that if we can just get them out of our unconscious minds and viscera and lay them on the table for explicit and conscious examination in the light of economic principle, then we may be able to exorcise our fears and dreads. That is the purpose of this present investigation. And how much it is needed!

In every walk of American life, there is great uneasiness over foreign competition. The endogenous virus of protectionism which has infested all of American history from our earliest colonial days, and which still persisted in the years up to the 1929 crash, had indeed been laid to rest from, say, 1934 when the Roosevelt-Hull Reciprocal Trade Program began to lower American tariffs. By 1955, everyone in America—corporate managers, workers, union officials, editors, and so on—all seemed to have turned away from protectionism.

## *The new protectionism*

Those days are gone forever. In the last dozen years of the overvalued American dollar, one of the most baleful heritages of our ostrich-like policy of benign neglect of the international deficit has been the mushrooming of protectionism. It is little exaggeration to say that everyone in America except a few academic economists has become a believer in protective tariffs, in mandatory or voluntary quotas. The few industrialists who still favor freer international trade either have a commercial reason to do so because of their export positions or I fear are right now hovering on the verge of a return to the protectionist fold. As an example, I offer you the automobile executives in Detroit. The workers there and their local unions have already turned protectionist, as you will verify if you go to any union meeting these days. Perhaps a few of the top executives, at least in their more public-spirited utterances, are still devotees of expanded international trade. But talk to the vice presidents in charge of domestic production and you will find a group of troubled men, who feel in their bones that in another decade North America may not turn out to be the place in which cars are to be viably built and sold in competitive markets. And, make no mistake about it, if it came to a choice between letting the auto business go abroad or protecting it here at home by quotas, these executives will come down on the side of protectionism. To them it is unthinkable that we should give up the auto industry. To do so would be criminally quixotic. And, in the view of all but the economics professors, the loss of basic industries like the auto industry would lower our real wage level and average standard of living.

To almost all Americans today it is an article of faith that using quotas on a wide scale—to save the textile, shoe, steel industries, and also the TV, electronics, auto, and tiddlywink industries—will be an important step in keeping real wages in America from deteriorating from their present all-time peak levels.

Theoretical economists may quote comparative-cost examples until they are blue in the face. But the man in the street will not believe the assertion that high-paid American workers can compete with imported goods made by low-paid foreign workers. Throughout our history one of the most powerful weapons in the arsenal of the protectionists has been the competitive threat from "cheap foreign labor."

Ironically at the same time that high-paid American workers have been frightened of the competition of low-paid workers abroad, low-productivity countries have always been as frightened of the competition from the more affluent countries. *The American Challenge* by Servan-Schreiber illustrates in our own time how deep is the fear of the American colossus.

## *Theory of comparative advantage*

The classical theory of comparative advantage contends that, if even-handed competition prevails between many suppliers and many demanders, then international specialization and trade, as well as capital movements, will work to the advantage of both countries—the poorer country as well as the richer, the exporter of capital who receives his profit yield out of the enhanced real product of the capital-importing country, which now has its real wages increased by having each worker with more capital.

Let us bring American fears into the open. The textile industry is an easy case. How can our workers who must be paid more than two dollars an hour compete in standard textiles with the workers of Hong Kong, Singapore, India, and Bangladesh? Textile manufacture is apparently one of the first activities that a developing country can do well in. With wages only small fractions of those in America, even if the foreign textile equipment is not quite as advanced as our own, costs of production abroad tend to fall lower than ours at home.

The theorist of comparative advantage agrees American resources should move out of cheap textiles, and for that matter shoes, and go to more efficient lines of production where our productivity is a larger multiple of foreigners' productivity. Yet when I said this over the New England airwaves, I received a letter from a trade association official in the shoe industry that said: "Your words will go down in the infamy of history along with those of Marie Antoinette." More poignantly, what can my answer be to a letter from a 59-year-old woman textile worker, asking where at her age she can possibly find another job. Shall I reply with the irrelevant contention that if immobile factors will let their wage fall flexibly far enough below the minimum wage, they may end up with a half a loaf of bread? At the least, the humane and politically savvy free trader must urge support for governmental financial assistance to those workers and capital facilities whose competitive rents fall victim to the dynamics of changing international specialization.

The task of the proponent of freer trade is not over. It has just begun. A great many industries are believed to be in the predicament of textiles. Without quotas, shoe imports may grow. The steel industry has thrown in the sponge and now lobbies shamelessly for voluntary and mandatory quotas. Cameras, tape recorders, desk calculators, and an increasing variety of electronic products come from Japan and Europe.

The simple truth is this: American public opinion generally is of the firm conviction that America lacks comparative advantage in anything! Perhaps the man in the street will allow, as a purely temporary exception, that the United States may still have a comparative advantage in the realm of aircraft and giant computers.

### *A logical impossibility*

The academic economist must be aghast at this turn of public opinion. From the very definition of comparative advantage—repeat *comparative*—the economist maintains it is a logical impossibility for any country to lack comparative advantage in anything. To be sure, by the definition of what economists mean by an overvalued currency, if the dollar is overvalued, then fewer and fewer of our industries will be commercially viable in the comparative-advantage sense. When that is the case the major premise of the free trader is denied: when workers are displaced from textiles, autos, you name it, it will not be because they've been sucked into a more efficient line of production, but rather that they are pushed into unemployment and onto the dole.

I must correct myself: in the age after Keynes we know how to expand fiscal deficits and monetary creation to keep purchasing power high even in the face of an overvalued currency. Displaced workers can be given jobs in public employment; or, as budget deficits lower over-all thrift, they can find jobs in expanded output of those few lines in which we do still have comparative advantage. But such a post-Keynesian solution only magnifies and perpetuates the other side of the coin of currency overvaluation. It means chronic deficits in our balance of payments, which require that nations abroad swallow a torrent of unwanted dollars.

Try as I may to be heretical, *my reason will not let me agree with the man in the street that there is no depreciation of the dollar relative to surplus currencies that will permit America to have full employment under free trade.*

The best econometric estimates that I have seen have been marshalled by Professor William Branson of Princeton University whom I am proud to count among MIT's former students. In the Brookings Papers on Economic Activity for mid-1972, Dr. Branson reviews the IMF, OECD, and Stephen Magee studies that generally suggest an improvement of $7 billion-$8 billion in America's current balance from the 12% depreciation of the dollar in the December 1971 Washington Currency Agreement. I shall not quarrel with this as a best single estimate. But I must emphasize the large variance that any estimate is subject to. A famous earlier econometric estimate by Brookings economists, which expected equilibrium in America's balance of payments by 1968, went astray because of the unexpected Vietnam war. Who knows what may vitiate these new estimates?

## *A summing up*

In closing, this much I must grant to the apprehensions of the man in the street. Were time not so short, my assertions could be less dogmatic.

1. No one knows the true size of the disequilibrium gap in the U.S. balance of payments just prior to August 15. *It may have been much larger than the experts think.* And the differential trends of productivity abroad relative to those here at home, which after all primarily created that gap, in my view, may still be working strongly against us in the years following the Smithsonian Agreement.

2. Therefore, the equilibrium parity of the dollar *may* have to be substantially downward in this coming decade. If such dollar depreciation is required, let us pray that gliding bands, crawling pegs, dirty floating, or clean floating will permit this to happen in an efficient way that preserves the fruitful international division of labor.

3. At home, traditional patterns of resource use may turn out to be *very far* from that equilibrium pattern necessitated by the vast changes in comparative advantage that have taken place over the last two decades and which may continue in the next. Even with post-Keynesian high employment, we know that the vested interests never give up their historic rents gracefully. The concentrated harm to themselves they see clearly and can make the public see; only the impractical eye of the academic economist sees clearly the even greater benefit to the community at large from adaptation to dynamic comparative advantage.

4. Achieving equilibrium dollar parities and adapting to changing comparative advantage may only minimize America's loss of welfare from international trade. While the dollar was overvalued we enjoyed to a degree a higher standard of living from tangible goods imported in return for payment of mere dollar IOUs. Also our corporations acquired lucrative productive assets abroad partly in exchange for those American dollars that foreign central banks reluctantly had to swallow. Just as Germany or any country paying reparations suffers a primary burden from its unrequited payment, so will there be a *primary* burden upon America

if we must replace our deficit by genuine export earnings. Beyond that, although a currency depreciation to restore equilibrium need not inevitably induce a deterioration of America's terms of trade, there is a real possibility that we shall be experiencing a *secondary* burden in the form of higher import prices relative to export prices. Indeed as Western Europe and Japan close the gap between our over-all productivity and theirs, quite aside from the financial aspects of currency parities, there could be a plausible trend against us in terms of lessened consumers' surplus from international trade.

In summarizing this point, I must guard against alarmist quantification. As long as America remains a continental economy whose imports stay in the neighborhood of not much more than 5% of GNP, it is hard to see how even elasticity-pessimism can knock more than a few percentage points off the 50% growth in our real GNP that demography and productivity trends should bring in the coming decade.

5. Let me conclude with a possibility that has some ominous overtones for the share of labor, particularly the share in growing GNP of organized industries. Under modern trends of comparative advantage, American management know-how (and for that matter management know-how anywhere) and American mobile capital may find that their most efficient use is increasingly to employ foreign labor as a substitute for traditional American activities. Washington, New York City, Pittsburgh, and Denver are increasingly what Max Weber called *cathedral cities*, or in updated terminology, *headquarters cities. So under floating exchange rates and relatively free-trade equilibrium, the United States might in time become a headquarters economy. Our emphasis in employment would shift to services and away from manufacturing.* It would become normal for us to enjoy an unfavorable balance of merchandise trade, reverting to the pre-1893 pattern in which the value of our merchandise imports exceeded the value of our exports. This trade deficit normally would be financed by our current *invisible* items of interest, dividends, repatriated profits, and royalties.

Though total American GNP would be the larger because of this free-trade equilibrium, it is possible that *the competitive share of property would rise at the expense of labor's wage share*. This would present a problem for our welfare state—to expand tax and transfer programs to secure a more equitable distribution of income.

6. Economics, alas, cannot be divorced from politics and from trends of ideologies hostile to absentee ownership. Suppose that economic equilibrium did dictate our becoming a service economy, living like any rentier on investment earnings from abroad. Let us grant that such an equilibrium, *if* permanent, could be optimal for the United States. But would it be safe for us to succumb to this natural pattern of specialization in a world of rising nationalism? Can one really believe that in the last three decades of the twentieth century the rest of the world can be confidently counted on to permit the continuing flow of dividends, repatriation of earnings, and royalties to large corporations owned here?

I do not think I am paranoid to raise a doubt in this matter. There is certainly a danger that, *after* the United States has moved resources out of manufacturing and into the servicing-headquarter regime, it might then turn out that nationalism impairs the successful collecting of the fruits of our foreign investments. We should then not only find ourselves poorer than we had expected but also facing the costly task of redeploying our resources *back* into the fields earlier abandoned. To be sure, private corporations may in some degree already take into account this danger of expropriation and thereby prevent an unwarranted redeployment of resources from taking place; but it is doubtful that they can be counted on to exercise the proper degree of prevision, particularly since they may well know that they can depend on our government to compensate them when such contingencies arise. Hence, there are rational grounds for some apprehensions concerning this aspect of spontaneous foreign-trade development.

I have tried to walk the mile with those who are fearful about international trends. Yet reason and experience have kept me from walking the whole mile with this overly pessimistic view. Let me end with a solemn warning.

*Even if the most dire pessimists are correct in their belief that much of existing American industry can be preserved in its present form only by universal protective quotas of the Burke-Hartke type, it is a pitiful delusion to believe that such measures will enhance rather than lower the real standard of living of the American people.*

Representative **Lungren**. Now we'll hear from another distinguished academician, Paul Craig Roberts, who is professor of political economy at the Center for Strategic and International Studies at Georgetown University.

Thank you for being with us and we welcome your statement.

## STATEMENT OF PAUL CRAIG ROBERTS, SENIOR FELLOW, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, GEORGETOWN UNIVERSITY, WASHINGTON, D.C.

Mr. **Roberts**. The idea of an industrial policy to spur economic growth and to create a healthy public attitude toward business is appealing at first glance, but before we leap to endorse one form of industrial policy over another, we should examine the case for each.

One form of industrial policy means a concerted effort on the part of government, business, and labor to design an economic program for the Nation. It encompasses a variety of strategies, some more ambitious than others—of tax concessions, government loan guarantees and subsidies, job training programs, export promotion schemes, and import restrictions. The ideas range from bailing out losers to picking winners and some try to incorporate both.

One need only walk into the local bookstore to see that industrial policy is a very popular fad.

While this kind of industrial policy may sell books, there is little evidence that it has helped many economies. In the majority of cases, industrial policy appears to have done more harm than good.

There is another kind of industrial policy about which less is written, but which is the foundation of every successful modern economy. It consists of a government commitment to provide an economic environment in which private business can thrive. This form of industrial policy entails a tax system that does as little damage as possible to economic incentives, provides a stable, dependable monetary system, and exercises restraint in government spending growth.

Proponents of an industrial policy for America like to point to Japan, or what they call "Japan, Incorporated," as proof of what an industrial policy can do for a nation. According to some people, businessmen in Japan sit down with government officials at a table in the Japanese Ministry of International Trade and Investment, MITI, to plan where money should be invested, what export strategies should be adopted, which industries should be encouraged and which should be gently eased toward the back door.

According to this view, Japan has an unfair advantage over the United States, which, for the most part, adheres to the principles of a free market. Our only hope, it is claimed, is to adopt an industrial policy of our own. Others say that we already have an industrial policy, but that it is uncoordinated and works at cross purposes.

There is mounting evidence, however, that Japan's success is not due to MITI. Robert Kaus provides an illuminating story in the February 1983 issue of Harper's that illustrates the limited power and foresight of the Japanese Government. Japan's industrial policymakers encouraged Honda to move out of auto production because it was feared that there would be too many auto manufacturers struggling against each other to maintain an efficient market. Luckily enough for Japan and car buyers, Honda didn't listen.

In addition to the fact that Japan's industrial policymakers have far from perfect judgment, it is not certain how important a role they actually play in the economy. In a collection of essays published by the Brookings Institution in 1976, Philip Trezise and Yukio Suzuki examined the extent of the role that politics and government play in Japan's economy and they concluded, to quote them:

> That the durability of conservative political rule was a positive factor. If private business provided much of the motive force for growth, business also had the assurance at virtually every point that government would be safe and sane, partial to profits and dedicated to business growth, willing to listen to business views, devoted to trying to maintain a social order in which business could feel secure.

Trezise again challenged the myth of Japan Inc. in the spring 1983 edition of the Brookings Review, saying, again, to quote:

> One has to be doubtful about the picture of wise bureaucrats sitting down with wise industrialists to plan in some detail the future shape of an economy that now produces, gross, more than a trillion dollars' worth of goods and services. What officials and advisers say or prescribe obviously can matter. But the allocation of resources in a free market economy—certainly in one as big as Japan's—depends on myriad decisions taken throughout the country.

The evidence is at best ambiguous that Japan's economic gains are due to its industrial policy. Some experts have concluded that planning has done more harm than good. Prof. Tsunchiko Watanabe of Harvard and Osaka Universities, for example, has written that in Japan, "national planning has not only been decorative, but also destructive, at least in some of its economic objectives."

Japan's success is more likely due to its policy of maintaining a stable economic environment, a high savings rate, and a tax system that does not penalize success. Most government subsidies do not buttress growth industries, but instead are devoted to public works, handled at the local government level. Other subsidies go to weak sectors of the economy, like the national railroads. As for the Japan Development Bank, it is more concerned with financing infrastructure than encouraging the computer industry, and most of its lending is on a relatively small scale. Indeed, during the 1970's, the Japan Development Bank's net lending, excluding housing, accounted for just 1 percent of private capital formation.

If we misinterpret the source of Japan's success, we risk adding to our economic problems.

Not only is the role played by Japan's industrial policy in its success an ambiguous one, but Japan itself is the strongest example that advocates of an industrial policy can muster. Other models of industrial policy are not perceived to be nearly as successful as Japan. France was the first nation to adopt an industrial policy, and supposedly was the source of inspiration for the Japanese. But the French experience with industrial planning is widely perceived as a failure.

There is a temptation to claim that the Japanese have focused on picking winners while the French have been bailing out losers. But in actual fact, Japan has been helping the dying but politically powerful apparel industry, because it is a large employer.

On the other hand, the Europeans have tried more often than not to put their money into promising high tech areas in the interest of helping the winners or what are sometimes called sunrise industries. The effect has been the opposite. Michael Wachter, an economic adviser to President Carter, has said that:

> France and Germany have made their high tech sectors weaker with government help. Those industries became more dependent on their governments for support, and the help proves to be something negative, not positive.

We have been hearing calls for a new Reconstruction Finance Corporation and I think that if we look at the history of this one we can find little in it to recommend a new one. Senator Fulbright, back when he was chairman of the Senate Banking and Currency Committee, reported on a good many of the studies on the corruption of this organization, which are quite amazing. But I won't take the time to read you too many accounts. Also, the investment decisions are quite fascinating. They allocated capital to businesses like roadside snake farms and trout farms, which did not prove to be sunrise industries.

I think that before you put the control of capital allocation in the hands of bureaucracy, you would have to have no other hope whatsoever on Earth.

There are additional economic problems with bringing back an RFC. If you made it politically accountable, the result would be that those industries with the biggest political clout, which would not necessarily be the most observing or the most promising, would be the ones to receive financing.

On the other hand, if you made it truly independent, you would have another Federal Reserve Board on your hands. An RFC bureaucracy would have far less incentive and ability to pick winners than venture capitalists. Indeed, bureaucracies are unimaginative and self-protecting and would naturally shy away from politically weak entrepreneurs with untested products and, instead, allocate capital to politically backed, established industries. This would be the kiss of death to the emerging sectors of our economy.

I do not see any grounds for believing that an RFC can allocate capital better than the capital markets.

Economists in general now agree that the economic recovery that began in January is going to be at least as strong as supply-side economists said it would be. It appears certain that the gloomy forecasts of David Stockman and Martin Feldstein are wrong. Nevertheless, advocates of industrial policy claim that even with recovery, our industrial base is outmoded, that we will no longer be able to keep up with our competitors, and that we have transformed ourselves into a service economy which doesn't produce anything more tangible than hamburgers and high tech movies like "The Return of the Jedi."

Happily enough, this is not so.

The production of goods as a percent of gross national product has not changed—it was 45.6 percent of GNP in 1960 and was 45.3 percent of GNP in 1980. Nor has the percentage of GNP originating in the manufacturing sector fallen over the past two decades. It was 23.3 percent in 1960 and 23.8 percent in 1980. As a share of gross private domestic investment, investment in producer's durable equipment has actually risen over 10 percentage points in the 20-year period, from 39.1 percent in 1960 to 49.4 percent in 1980.

It is no cause for alarm that as a share of total employment, the manufacturing sector has fallen from about 31 percent in the 1960's to 22 percent in 1980. The fact that output did not also decline is evidence that this is a result of high productivity, not industrial decline.

Consider, in 1929, the agricultural sector's share of total civilian employment was over 21 percent. But by 1950, it had dropped to only 11½ percent. Despite the drop in employment in farming, agriculture's share of the gross national product had more than doubled, and Harry Truman was not proposing any agricultural job training programs.

This is not to say that all is well with the American economy. Taxes on employment and on income from saving are still too high, and monetary policy continues on a stop-go cycle. But to take a radically new approach inconsistent with our national heritage is not what is called for. The kind of industrial policy America needs is one that protects property rights and decentralized decisionmaking and provides stable, dependable macroeconomic policies, restraint in the growth of Government spending, and a tax system that does not result in a maze of economic disincentives.

Congressman, although I oppose the increase in Government intervention in the economy that an industrial policy would bring, there is one encouraging aspect to all of the talk about it. The liberals have given up their flirtation with a no-growth economy and reaffirmed their former belief that economic growth is vital to the shared goal of industrial society. Most of the advocates of an industrial policy are pushing supply-side policies—only they want to implement them through the Government rather than through the market. I call it supply-side socialism, and it shows that supply-side concerns have set the agenda for the 1980's.

Representative LUNGREN. Thank you, Mr. Roberts, we appreciate your taking the time to appear before this committee.

[The prepared statement of Mr. Roberts follows:]

## PREPARED STATEMENT OF PAUL CRAIG ROBERTS

The idea of an industrial policy to spur economic growth and to create a healthy public attitude toward business is appealing at first glance, but before we leap to endorse one form of industrial policy over another, we should examine the case for each..

One form of industrial policy means a concerted effort on the part of government, business and labor to design an economic program for the nation. It encompasses a variety of strategies--some more ambitious than others--of tax concessions, government loan guarantees and subsidies, job training programs, export promotion schemes and import restrictions. The ideas range from bailing out losers to picking winners--and some try to incorporate both. One need only walk into the local bookstore to to see that industrial policy is a very popular fad.

While this kind of industrial policy may sell books, there is little evidence that it has helped many economies. In the majority of cases, industrial policy appears to have done more harm than good.

There is another kind of industrial policy about which less is written but which is the foundation of every successful modern economy. It consists of a government commitment to provide an economic environment in which private business can thrive. This form of industrial policy entails a tax system that does as little damage as possible to economic incentives, provides a stable, dependable monetary system, and excercises restraint in government spending growth.

Proponents of an industrial policy for America like to point to Japan, or "Japan Incorporated," as they call it, as proof of what an industrial policy can do for a nation. Japan has enjoyed sparkling economic growth rates with low inflation at a time when the rest of the world was experiencing stagflation. Just what kind of industrial policy does Japan have?

According to some people, businessmen in Japan sit down with government officials at a table in the Ministry of International Trade and Investment (MITI) to plan where money should be invested, what export strategies should be adopted, which industries should be encouraged and which should be gently eased towards the back door. According to this view, Japan has an unfair advantage over the United States, which for the most part adheres to the principles of a free market. Our only hope, it is claimed, is to adopt an industrial policy of our own. Others say that we already have an industrial policy, but that it is uncoordinated and works at cross purposes.

There is mounting evidence, however, that Japan's success is not due to MITI. Robert Kaus provides an illuminating story in the February 1983 Harper's that illustrates the limited power and foresight of the real Japanese government. Japan's industrial policymakers encouraged Honda to move out of auto production, because it was feared that there would be too many auto manufacturers struggling against each other to maintain an efficient market. Luckily enough for Japan and car buyers, Honda didn't listen.

In addition to the fact that Japan's industrial policymakers have far from perfect judgment, it is not certain how important a role they actually play in the economy. In a collection of essays published by the Brookings Institution in 1976, Philip Trezise and Yukio Suzuki examined the extent of the role that politics and government play in Japan's economy and concluded:

> A warranted conclusion is that the durability of conservative political rule was a positive factor. If private business provided much of the motive force for growth, business also had the assurance at virtually every point that government would be safe and sane, partial to profits and dedicated to business growth, willing to listen to business views, devoted to trying to maintain a social order in which business could feel secure.

Trezise again challenged the myth of "Japan Incorporated" in the Spring 1983 edition of the Brookings Review, saying,

> One has to be be doubtful . . . about the picture of wise bureaucrats sitting down with wise industrialists to plan in some detail the future shape of an economy that now produces, gross, more than a trillion dollars worth of goods and services. What officials and advisers say or prescribe obviously can matter. But the allocation of resources in a free market economy--certainly in one as big as Japan's--depends on myriad decisions taken throughout the country.

The evidence is at best ambiguous that Japan's economic gains are due to its industrial policy. Some experts have concluded that planning has done more harm than good. Tsunehiko Watanabe of Harvard and Osaka Universities, for example, has written that in Japan, "national planning has not only been decorative, but also destructive at least in some of its economic objectives."1/

Japan's success is more likely due to its policy of maintaining a stable economic environment, a high saving rate and a tax system that does not penalize success. Most government subsidies do not buttress growth industries but instead are devoted to public works, handled at the local government level.

Other subsidies go to weak sectors of the economy, like the national railroads. As for the Japan Development Bank, it is more concerned with financing infrastructure than encouraging the computer industry, and most of its lending is on a relatively small scale. Indeed, during the 1970s, the Japan Development Bank's net lending (excluding housing) accounted for just 1 percent of private capital formation.[2/] If we misinterpret the source of Japan's success, we risk adding to our economic problems.

Not only is the role played by Japan's industrial policy in its success an ambiguous one, but Japan itself is the strongest example that advocates of an industrial policy can muster. Other models of industrial policy are not perceived to be nearly as successful as Japan. France was the first nation to adopt an industrial policy, and supposedly was the source of inspiration for the Japanese. But the French experience with industrial planning is widely perceived as a failure.

There is a temptation to claim that the Japanese have focused on picking winners while the French have been bailing out losers. But in actual fact Japan has been helping the dying but politically powerful apparel industry, because it is a large employer.

On the other hand, the Europeans have tried more often than not to put their money into promising high tech areas in the interest of helping the winners or what are sometimes called "sunrise industries." The effect has been the opposite. Michael Wachter, an economic advisor to President Carter, has written that:

> France and Germany have made their high-tech sectors weaker with government help. Those industries become more dependent on their governments for support, and the help proves to be something negative, not positive.

In the past couple of years, a growing number of voices in the United States have been calling for a Reconstruction Finance Corporation like the one originated by Herbert Hoover and called into action (as part of the New Deal) by Franklin Delano Roosevelt. The idea behind a new R.F.C. is that private enterprise can no longer be counted on to provide the nation with stable economic growth and prosperity. Felix Rohatyn, a New York investment banker, has a vision of a modern R.F.C. that, in his words,

> would be the investment and development bank of the Government, publicly accountable, but sheltered from political pressures. It would be a focus of American commitment to our basic industrial underpinning as well as to rebuilding cities, harbors, transportation systems--the complex of facilities known as infrastructures.3/

First of all, how realistic is it to assume that today's R.F.C. would be fundamentally different from the original version? The orignal R.F.C. was dissolved in 1953 amid charges of corruption, fraud, and political favoritism. In a 1951 report of an investigation into the activities of the R.F.C., the chairman of the Senate Banking and Currency Committee, J. William Fulbright, a Democrat from Arkansas, wrote:

> There has been a large number of instances in which the board of directors [of the R.F.C.] has approved the making of loans, over the adverse advice of the corporation's most experienced examiners and reviewing officials, notwithstanding the absence of compelling reasons for doing so and the presence of convincing reasons for not doing so.

An article in the January 1952 issue of Harper's magazine confirmed the Banking Committee's report, pointing out that the R.F.C.:

> . . . thrust money on the proprietors of roadside snake farms, cultivators of cactus plants for sale in dime stores, dental clinics, paperboard makers, mattress makers, television manufacturers, canneries, movie houses, cafes, drug stores, truckers, a trailer manufacturer, a maker of fluorescent lamps, a rainbow trout factory, and some very dubious fellows who wanted to be concessionaires for the roulette room in a Nevada hotel.

Whatever rainbow trout factories and Las Vegas gamblers have in common, neither were major growth industries that promised to increase employment. Whose idea it was to sponsor these enterprises and for what reason is really beside the point. Bringing back the R.F.C. would put government back in the business of allocating capital. The control of capital by government is a powerful instrument, and the potential for abuse, as illustrated by the R.F.C. scandals, is very great.

There are additional problems with reestablishing the R.F.C. If a new R.F.C. were made "politically accountable," the result would be that those industries with the biggest political clout, not necessarily the most deserving or the most promising, would be the ones to receive financing. On the other hand, if a truly independent R.F.C. were established, we would have another Federal Reserve Board on our hands. That would be a lot of power independent of the legislative and executive branches.

An R.F.C. bureaucracy would have far less incentive and ability to pick winners than venture capitalists. Indeed, bureaucracies are unimaginative and self-protective and would naturally shy away from politically weak entrepreneurs with untested products and instead allocate capital to politically-backed established industries. This would be the kiss of death to the emerging sectors of our economy. I do not see any grounds for believing that an R.F.C. can allocate capital better than the capital markets.

Economists in general now agree that the economic recovery that began in January is going to be at least as strong as supply-side economists said it would be. It appears certain that the gloomy forecasts of David Stockman and Martin Feldstein are wrong. Nevertheless, advocates of an industrial policy claim that even with recovery, our industrial base is outmoded, that we will no longer be able to keep up with our competitors and that we have transformed ourselves into a service economy which doesn't produce anything more tangible than hamburgers and high-tech movies like the "Return of the Jedi." Happily enough, this is not so.

The production of goods as a percent of gross national product has not changed--it was 45.6 percent of GNP in 1960 and was 45.3 percent of GNP in 1980. Nor has the percentage of GNP originating in the manufacturing sector fallen over the past two decades--it was 23.3 percent in 1960 and 23.8 percent in 1980. As a share of Gross Private Domestic Investment, investment in producer's durable equipment has actually risen over 10 percentage points in the twenty-year period, from 39.1 percent in 1960 to 49.4 percent in 1980 (see Table).

Investment in Producers' Durable Equipment as a Share of Gross Private Domestic Investment (dollars in billions)

| Year | Gross Private Domestic Investment | Producers' Durable Equipment | Percent |
|---|---|---|---|
| 1950 | $53.8 | $17.8 | 33.1 |
| 1955 | 68.4 | 23.9 | 34.9 |
| 1960 | 75.9 | 29.7 | 39.1 |
| 1965 | 113.5 | 45.8 | 40.3 |
| 1970 | 144.2 | 65.2 | 45.2 |
| 1975 | 206.1 | 102.3 | 49.6 |
| 1980 | 402.3 | 198.6 | 49.4 |

Source: Department of Commerce, Bureau of Economic Analysis

It is no cause for alarm that as a share of total employment, the manufacturing sector has fallen from about 31 percent in 1960 to 22 percent in 1980. The fact that output did not also decline is evidence that this is a result of higher productivity, not industrial decline. In 1929 the agricultural sector's share of total civilian employment was over 21 percent, but by 1950 it had dropped to only 11.5 percent. Despite the drop in employment in farming, agriculture's share of the gross national product had more than doubled, and Harry Truman was not proposing any agricultural job training programs.

This is not to say that all is well with the American economy. Taxes on employment and on income from saving are still too high, and monetary policy continues on a "stop-go" cycle. But to take a radically new approach inconsistent with our national heritage is not what is called for. The kind of industrial policy America needs is one that protects property rights and decentralized decision-making and provides stable, dependable macroeconomic policies, restraint in the growth of government spending and a tax system that does not result in a maze of economic disincentives.

Although I oppose the increase in government intervention in the economy that an industrial policy would bring, there is one encouraging aspect to all the talk about it. The liberals have given up their flirtation with a no-growth economy and reaffirmed their former belief that economic growth is vital to the shared goals of an industrial society. Most of the advocates of an industrial policy are pushing supply-side policies--only they want to implement them through the government rather than through the market. I call it "supply-side socialism," and it shows that supply-side concerns have set the agenda for the 1980s.

Footnote

1. Tsunehiko Watanabe; "National Planning and Economic Development: A Critical Review of the Japanese Experience;" in _Economics of Planning_; Harald Hallaraker, ed.; Vol. 10, No. 1--2; 1970; p. 50.

2. See Philip Trezise; "Industrial Policy Is Not the Major Reason for Japan's Success;" _The Brookings Review_; Spring 1983; pp. 13-18.

3. Felix Rohatyn; "Alternatives to Reaganomics;" _New York Times_; December 5, 1982.

Representative LUNGREN. Another distinguished panelist who has taken the time to appear before us is Mr. Oswald, director of the department of economic research at the American Federation of Labor and Congress of Industrial Organizations.

We appreciate your taking the time to appear before this committee and we welcome your testimony. Please proceed as you wish.

## STATEMENT OF RUDOLPH OSWALD, DIRECTOR, DEPARTMENT OF ECONOMIC RESEARCH, AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS (AFL-CIO), WASHINGTON, D.C.

Mr. OSWALD. Thank you, Congressman. I would like in part of my testimony not only to refer to what is in my prepared statement, but to respond a little bit to some of the comments that have been made here this morning. Contrary to some of the other members of this panel, I would like to say that the AFL-CIO has strongly endorsed industrial policy as a means of dealing with the economic issues and problems that confront the Nation. We believe that there is substantial evidence as to a need for developing an economic policy that includes macroeconomic policies for economic growth as well as micropolicies that deal with the means in which that growth affects different industrial sectors.

The issue, I think, that is often overlooked in the discussion is that even macroeconomic policy does have a differential effect upon various industries. Policies are not neutral as they affect industrial development. For example, the recent pursuit of tight monetary policy with its accompanying high interest rates differentially affected housing construction, capital investment and public investment and among manufacturing industries, particularly auto and steel industries, those that were particularly capital intensive.

The sectors of the economy that were not capital intensive were not severely affected by the tight monetary policy. Manufacturing industries also have been hit by the increasing value of the dollar, but other industries, such as the health care industry, are unaffected.

For example, during the last 3 years, the value of the dollar has increased by 38 percent against our major trading partners and by more than 100 percent against the value of all of our trading partners put together.

These differential effects of the macropolicies need to be analyzed and programs and policies developed to insure that industries vital to the Nation's overall welfare be encouraged, rather than hampered, in public economic policies. Some of the discussion has been about the market system. But the market system that manufacturers face in international trade is not a real market system that is based on the items over which they have any control. But it is beset by an overvalued dollar, by high interest rates that price them out of the market.

Paul Samuelson earlier commented about high U.S. wage and benefit levels. Of course the United States is proud of its standard of living. But during the 1970's, U.S. wage increases were less than that of other major industrialized countries. But during the last 3 years, that increasing value of the dollar has more than eroded the sorts of benefits that resulted not only from the lower wage increases and, yes, U.S. productivity increases were lower than in other countries, but unit labor costs during the period of the 1970's in manufacturing increased less than that of other countries.

So one finds that the macropolicy effects on industries have a very differential effect on the ability of American corporations to function and to maintain their ability to engage in those industries that we traditionally have depended upon for producing the goods that America uses and consumes.

Mr. Roberts had indicated that supply-side economics works. I recall his telling us 2 years ago that just passing the sort of things that he was advocating at that time would have such an effect upon expectations that there would be an immediate boom. Instead, unemployment went from 7 percent to over 10 percent and it is not expected by most economists to fall below 8 percent until 1986. And 8 percent unemployment was the level that we considered a recession depth in 1975 and it was the worst level that was experienced in terms of unemployment in the whole post-war period, except for that 1975 recession.

So that the policies that are currently pursued leave the country with very high unemployment for a long period of time, with a serious erosion of a number of industries as the differential impact affects those industries. And, in a sense, we have wasted billions of dollars in product and income that will never be recovered during this time period.

We feel that to overcome those issues, one needs to bring together not only the bureaucrats that were mentioned, but also the private sector, to develop a rational national industrial policy, one that would include representatives of labor, business, and the Government to form a national reindustrialization board, and that board would work together to develop a balanced economic program to insure the revitalization of not only the Nation's sick industries and decaying communities, but also to encourage the development of new industries with promise for the future.

It's not Government picking winners, but it is the Government working together with the private sector to encourage the notion that policies need to be incorporated in such a way to encourage economic development. That board would encourage productivity growth, dissemination of research and development findings, and a balanced use of the Nation's resources. It would target industrial sectors and regions that particularly need help.

The national reindustrialization board would also be directed to consult with and be consulted by the administration, the Federal Reserve Board, and play a role in terms of dealing with Congress as a liaison with labor and industry.

We believe that that board also should provide guidance in the activities of the financing agency that is patterned after the Reconstruction Finance Corporation of the 1930's and 1940's.

We believe that that banking agency should be authorized to make the guarantee loans to finance approved reindustrialization ventures and private pension funds should be encouraged to make investments in such financing arrangements to support and expand industrial employment in the United States.

The adequacy of venture capital that Jack Albertine spoke about ignores the costs of the interest levels which at many times are at such high levels that they do not allow development. And contrary to what Mr. Roberts said, the Reconstruction Finance Corporation of the 1930's and 1940's did maintain a number of industries as well as helped develop synthetic rubber in this country at a time when it was needed, and other new economic developments.

We think that the important item in a reindustrialization board is bringing together all of the elements in economic society, one that would include the interests of workers, industry, and consumers, all of the people in an integral part of economic decisionmaking processes.

Clearly, there has been evidence that in certain industries, capital facilities are deteriorating. We believe that providing capital in those industries could be a very important element in terms of assuring the continued industrial maintenance of those sectors of the economy. Some of those loans could be participation loans or guarantee loans to private industries or local governments. The sort of lending that this RFC would undertake would be under the direction, in our consideration, of a reindustrialization board that would include all these factors, all these partners in our society.

That lending also would include lending for public facility loans and would use some of the nearly $600 billion of private pension funds and public pension funds in this country to encourage the reindustrialization and the expansion of employment.

We believe that the country needs not only macropolicies for growth, but micropolicies that incorporate the concern of the microelements that we described above. We believe that it is time to involve the private sector in dealing with economic problems, that labor and management, as well as Government, play a major role in the performance of the economy and it should be recognized in establishing a new mechanism to bring about the incorporation of these policymakers in terms of developing a coordinated economic development of this country.

Thank you, Congressman.

Representative LUNGREN. Thank you, Mr. Oswald.

[The prepared statement of Mr. Oswald follows:]

## PREPARED STATEMENT OF RUDOLPH OSWALD

I appreciate the opportunity to present to you the views of the AFL-CIO on U.S. industrial policy. The subject is of vital importance to the workers, and indeed, to all the citizens of this country.

The need for a national industrial policy in the United States is becoming more and more evident. The American economy is experiencing the highest and most extended period of unemployment since the Great Depression. The growth of the economy dropped in 1980 and 1982, and the U.S. position in world trade has deteriorated dramatically. In both the private and public sectors, the modernization of physical capital has been inadequate. The industrial base of the American economy is eroding and, there is no coherent national policy to reverse the trend.

Every macro-economic policy has a differential effect upon various industries. Policies are not neutral as to how they affect industrial development. For example the recent pursuit of a tight monetary policy with its accompanying high interest rates, differentially affected housing, construction, capital investment, and public investment, and the auto industry. Sectors of the economy that were not capital intensive were not severely affected by the tight monetary policy. Manufacturing industries have been hard hit by the increasing value of the dollar, but the health care industry is unaffected. These differential effects of macro-economic policies need to be better analyzed and programs and policies developed to ensure that industries vital to the nation's overall welfare be encouraged rather than hampered by public economic policies.

Current levels of unemployment and idle capacity are causing the loss of hundreds of billions of dollars in product and income that can never be recovered. To carry forward a rational national industrial policy, a tripartite National Reindustrialization Board should be created which would include representatives of labor, business, and the government. The Board would develop a balanced economic program to insure the revitalization of the nation's sick industries and decaying communities, while at the same time encouraging the development of new industries with promise for the future. The Board would encourage productivity growth, dissemination of research and development findings, and a balanced use of the nation's resources. It would target industrial sectors and regions that particularly need help. The National Reindustrialization Board would also be directed to consult with, and be consulted by, the Administration and the Federal Reserve Board. The composition of the Reindustrialization Board should automatically provide Congress with a liaison with labor and industry.

This Board would also provide policy and priority guidance for the activities of a financing agency, patterned after the Reconstruction Finance Corporation of the 1930s and the 1940s. It would be authorized to make and guarantee loans to finance approved reindustrialization ventures. Private pension funds could be encouraged to make investments in such financing arrangements to support and expand industrial employment in the United States.

The Reindustrialization Board would bring together all of the elements in economic society. It would insure that the interests of workers, industry, consumers -- all the people -- are an integral part of the economic decision-making process.

The AFL-CIO has recognized for some time that both private and public capital facilities are deteriorating. The proposed new RFC would make, participate in, or guarantee loans to private business and local governments in the industrial sectors and geographic regions designated by the Reindustrialization Board. The actual lending and other financing functions carried on by the RFC would be under the Reindustrialization Board.

The RFC could handle loans to private business and to state and local governments. Each of the two lending "windows" would be operated under an executive officer appointed by the Board of Directors. The Board of Directors would also be required to see that there was coordination between the two lending units to maximize economic development in areas where new construction or improvement of public facilities is needed to enhance the efficiency of the private business activities being assisted. Public facility loans should also be available to other areas in need of such loans to renew or expand public facilities required in the local economy. The issuance of capital stock to be subscribed by the Secretary of the Treasury for the RFC would be authorized by legislation, with authority for the RFC to issue bonds.

Pension funds should be used for reindustrialization and expansion that provides employment, as long as there are adequate protections for the pension funds. The legislation should provide that all obligations of the Corporation which are purchased by employee pension benefits plans shall be guaranteed -- backed by the full faith and credit of the U.S.

With this summary of AFL-CIO concerns in mind, let me outline our concerns in greater detail.

Unfortunately, the present Administration would turn back to 19th century economic nostrums and would abrogate all responsibility to Adam Smith's "unseen hand." America needs policies, including an industrial policy, that meet the nation's needs for full employment and expanded noninflationary production.

The unemployment rate which had been 5.8 percent in 1979 rose to 10.8 percent in December 1982 and is still more than 10 percent. There are more than 11 million unemployed people by the official count. In addition, there are those too discouraged to seek work and those working part-time involuntarily for a total of 19 million persons affected by loss of income and work opportunities.

Even after five more years, unemployment in 1988 will still be higher than it was in 1979, according to the Congressional Budget Office and the Reagan Administration projections.

At the same time, the excessive unemployment and idle capacity is causing the loss of hundreds of billions of dollars in foregone product and income that can never be recovered. It is generally acknowledged that the economy loses at least $100 billion in goods and services and income for every one percent of unemployment.

While the need for an extensive reindustrialization effort has been widely recognized, there is no consensus on the policies needed to achieve this goal. The reason for this lack of consensus lies predominately in different perceptions regarding overall economic policy. First of all, there clearly are sectoral and regional problems in the economy, and aggregate policies whether focussed on supply, demand or even a sensible combination of both will not be enough to meet the nation's industrial problems. The nation's economic problems do not exist solely at an aggregate or across-the-board level, but in specific industries, regions, and income categories. Accordingly, the current infatuation with supply-side economics, tight money and diminution of governmental responsibility, ignores the true sources of the nation's economic problems.

Unfortunately, the supply-side fad has been used by the Administration to justify a set of economic policy proposals that are very costly in terms of the revenues lost through tax cuts, and diminish the standard-of-living of low-income households through cuts in Federal programs. The business tax cuts are much too costly, totally ignoring the need to target tax assistance to the specific industries and areas that are in need of assistance. Moreover, the individual tax cuts are grossly inequitable, giving vastly disproportionate tax reductions to upper income households.

On the business side, the Administration backed rapid and arbitrary speed-up in depreciation write-offs which render the concept of business income for tax purposes meaningless. Huge revenue losses result and the corporate contribution to the costs of government is slashed.

The across-the-board nature of this tax cut ignores the earlier strength in aggregate investment. For example, non-residential fixed investment remained above 11 percent of GNP during 1978, 1979, 1980, but has fallen in 1981 and 1982 as a result of the Reagan policies. Moreover, during the thirty years prior to 1978, non-residential fixed investment never exceeded 11 percent of gross national product. If there was something wrong with the supply side, it definitely was not lagging overall business investment.

However, the recession-depression which started in 1981 and high-interest rates resulting from deliberate tight-money policies in recent years have had very negative effects on private sector investment. Business investment dropped in 1981 and again in 1982. Low utilization of existing capacity continues to depress business investment in 1983.

In the public sector, infrastructure investment has also suffered. The nation's network of roads, bridges, sewers and rails is nearing collapse. Such conclusions are supported by data on the annual rate of state and local public construction. Adjusted for price change, to provide a measure of physical volume, the annual total declined in each year since 1978. Notable declines have occurred in selected construction categories, including highways and streets, sewer systems, water supply facilities, and housing and redevelopment.

In the headlong drive to bestow massive tax cuts upon private business, while cutting government capital programs, the Administration is ignoring the crucial importance of the nation's infrastructure to private sector productivity. For example, as the network of roads, rails and ports is allowed to deteriorate, there are delays in transporting goods which are reflected in cost and price increases. Expansion of business may be discouraged by inadequate sewer and water facilities, and by the inability of workers to get to work on time because of frequent breakdowns by inadequately maintained public transit facilities.

The deterioration of public facilities must therefore be reversed if we are to be able to rebuild our industrial base. Accordingly, the Administration's cut in programs that contribute to public capital formation are inconsistent with the goal of promoting economic growth. Such programs as the Economic Development Administration (EDA), Urban Development Action Grants (UDAG), mass transit, rail subsidies, highway construction, and water purification support general business activity and should be expanded.

While the private business sector as a whole is now lagging and overall manaufacturing capacity utilization is barely over 70 percent, several sectors that are essential to a diversified industrial economy have had severe problems. For example, basic steel, iron and steel foundries, and the automobile industry have all experienced precipitious declines in output. These industries are basic to a productive industrial economy because they provide materials needed to produce other products and they generate demand for the products of other sectors.

These declines demonstrate that across-the-board business tax cuts are not the appropriate remedy for the nation's industrial problems. Rather, if tax cuts are to play an efficient role in the nation's reindustrialization efforts, they must be targeted to those industries that are essential to an industrial economy and are in need of this assistance.

Just as all industries would not warrant tax benefits under a coherent industrial policy, not all areas have an equal need for reindustrialization. For example, many cities in the nation's older industrial heartland have extremely high unemployment rates in excess of the already high national average. Higher than average unemployment was not, however, concentrated solely in the nation's older industrial cities. Many Southern and Western cities also had abnormally high rates of unemployment. While the Southern and Western states have generally not experienced increases in joblessness that were as dramatic as those in the Northeast and Midwest, the data demonstrate that no regions are totally immune from industrial decline. The implication for industrial policy are quite simple: in addition to targeting by industry, reindustrialization resources must also be targeted by area.

In addition it should not be forgotten that these high rates of unemployment which are largely the result of painfully restrictive demand management policies, have deleterious implications for the supply-side. Specifically, the quality of human capital is diminished by periods of high unemployment. People who cannot get jobs because of this intentionally induced economic sluggishness are delayed in developing job skills, and people who are laid off tend to lose job skills. The stock of human capital declines, thereby retarding productivity growth.

During the past twelve months, the American share of the world market for manufactured goods declined and the U.S. share of domestic market for manufactured goods also declined. This deindustrialization resulted in the loss of at least 1.5 million jobs in manufacturing.

The U.S. trade balance suffered a record $40 billion deficit in 1981, and in 1982, the deficit was about $40 billion in spite of a big drop in oil imports. Other nations increased their barriers to imports of U.S. goods and subsidized their exports to the U.S. No effective action has been taken to halt this trend or to guide increased capital flows to basic economic sectors that need modernization and expansion.

The Administration's monetary policies raised the value of the dollar, ecouraging imports and retarding exports. These monetary policies have raised the value of the dollar in the last two years by 20 percent against the Japanese yen and 22 percent against the German mark, thus weakening the U.S. position in world trade relative to our major trading competitors.

This country is still the greatest economic productive power on earth, although the U.S. lead is decreasing. America must begin to sort out national priorities and channel resources into areas that will modernize private and public facilities and restore the national economy to a condition of stable-growth. Failure to follow a course to achieve these objectives means that the country will continue to lag in productivity growth and international trade; it will continue to have significant portions of its human and machine resources remain idle for extended periods of time; it will continue to suffer a reduction in the standard of living of its people.

A common thread that runs through the economies of countries that have grown faster than the U.S. is their adoption of a coordinated industrial policy that systematically includes the views of labor, industry and the public. By contrast, the Administration would have the U.S. at the mercy of the unseen hand. It is time to deal directly with the nation's many concrete and visible problems.

As I noted at the beginning of this statement, the AFL-CIO has proposed the creation of a tripartite National Reindustrialization Board -- including representatives of labor, business, and the government -- which would develop a balanced program to insure the revitalization of the nation's sick industries and decaying communities, while at the same time it would encourage the development of new industries with promise for the future. The Board would encourage productivity growth, dissemination of research and development findings, and a balanced use of the nation's resources. It would target industrial sectors and regions that particularly need help. The National Reindustrialization Board would also be directed in the process of developing its policies and priorities to consult with the Council of Economic Advisors and the Federal Reserve Board. The composition of the Reindustrialization Board should automatically provide liaison with Congress, labor and industry.

This Board would also provide policy and priority guidance for the activities of a financing agency, patterned after the Reconstruction Finance Corporation of the 1930s and 1940s, which would be authorized to make and guarantee loans to finance approved reindustrialization ventures. Instead of using industrial development bonds to support more McDonald's and K Marts -- currently the biggest recipients of industrial development financing -- the RFC would be concerned with the industrial base of the country.

Private pension funds could be encouraged to make investments in such financing arrangements to support and expand industrial employment in the United States. National policies that encourage investment abroad rather than in the United States undermine domestic employment opportunities.

The Reindustrialization Board would take into account more than just short-term profits for a corporation -- but rather would be attuned to the long-term development and welfare of the nation. The obsession of business with short-term goals needs to be balanced by a longer term perspective of the needs and aspirations of the American people.

The Reindustrialization Board would bring together all of the elements in economic society. It would insure that the interests of capital, of labor, and of the people are all made an integral part of the economic decision making process.

The AFL-CIO has recognized, for some time, that both private and public capital facilities were deteriorating. Actions to counter this source of economic debilitation were recommended in a resolution adopted at the November 1981 biennial convention of the AFL-CIO which included the two following paragraphs:

> "To modernize and revitalize the American economy, business, labor, and government should participate in a tripartite Reindustrialization Board. Under this board, a Reconstruction Finance Corporation would invest public and private funds in necessary reindustrialization projects.
>
> "The urban infrastructure of sewers, water systems, streets, and bridges needs to be renewed and the nation's transportation network must be upgraded for people and goods to move more efficiently. Railroads, highways, port facilities and airports are in desperate need of rehabilitation. Urban mass transit systems need support and modernization."

## National Government Role in Economic Development

Any industrial policy that is formulated and pursued would mark a continuation of a long history of a government role in furthering the economic development of the country, instead of relying upon the guidance of an "invisible hand." In the 200 years since Adam Smith described such guidance, the economic preeminence of the United States developed with the participation of the federal, state and local government and periodic modifications of economic institutions through legislation.

Public canals and roads and private railroads and airlines were built with government assistance from the earliest years of the nation. Federal mortgage insurance spurred mass production of housing, and federal rural electrification loans advanced American agriculture. In more recent years, mass transit, water, and sewer systems have been built and renewed with federal assistance. The budget policies of the Reagan Administration are cutting back many of the federal programs that have been assisting state and local governments in the provision of public facilities and in economic development. It will not be possible for many states and localities to fill the gap. Without help, the public infrastructure which is an essential complement to private capital will not be fully maintained or adequately expanded.

## An RFC Precedent

Following the Great Depression, during the years 1932-34, there were additional economic and financial institutions created such as deposit insurance, mortgage insurance, the Federal Home Loan Bank system, and the Reconstruction Finance Corporation (RFC). The latter was an industrial policy program. It not only provided capital to rescue ailing companies such as the B&O Railroad, it also helped start new firms, such as Reynolds Aluminum to increase industrial production capacity where needed. It also helped develop the synthetic rubber industry in World War II. The old RFC stopped making loans in 1953 and was completely liquidated in 1957.

In the pre-World War II depression years, the old RFC, in addition to making loans to private businesses, between 1935 and 1941 purchased about $700 million in securities from the Federal Emergency Administrator of Public Works (later the Public Works Administration), which supported public works construction activities that provided jobs in areas of high unemployment. Today, that would be about $7 billion of construction projects, given the rise in construction costs. It also aided housing construction, through investments in the RFC Mortgage Company, later to become the Federal National Mortgage Association, which spun off the Government National Mortgage Association. Some $4 billion in loans were disbursed to help private financial institutions survive the depression.

The largest part of RFC investments was in RFC subsidiaries for essential defense and war production of metals, chemicals, rubber, etc., which absorbed about $21 billion, mostly during the years 1941-45.

However, the bulk of the loans to private, non-defense business, as well as direct loans made through the RFC mortgage company were made in the post-World War II period, to help in the industrial reconversion of the economy to a peacetime status. In the approximately 21 years of its active operation, from 1932 to 1953, the RFC either made direct loans and took immediate participation, or took deferred participation in business loans as follows:

| | Number | Amount |
|---|---|---|
| direct loans and immediate participations | 35,852 | $ 3,579,980,488 |
| deferred participation | 23,623 | 1,288,339,823 |
| TOTAL | 59,475 | $ 4,868,320,311 |

The deferred participations were, in effect, loan guarantees for up to 75, 80 or 90 percent of the principal amount. Loans went to firms in almost every major category of manufacturing, as well as to enterprises in agriculture, forestry, fishing, mining, construction, wholesale and retail trade, services, transportation and other utilities. The current equivalent purchasing power of the approximately $5 billion in loans made by the old RFC would be several times that amount today.

The operations of the old RFC which continued into 1953 helped to lead the economy out of the Great Depression, to finance wartime defense production and to help in the post-war industrial expansion that supported a long period of economic growth, relative price stability, and prosperity. It also provided a precedent for creation of an institution to help in industrial revitalization when the economy reaches a historic period of blocked growth. Apparently such conditions exist in the American economy today.

## Proposed New Institutions

In order to get out of the current economic impasse and restructure the economy to a path of increased productivity and growth, a special institutional effort is needed. For that purpose, the AFL-CIO has endorsed adoption of an industrial policy, to serve both the private and public sector. Furthermore, we believe that the desired type of policy can be implemented through some combination of a National Development Bank and a Reconstruction Finance Corporation to make loans and loan guarantees to private businesses and to state and local governments for public works and facilities. A single institution could combine the functions of loans to private business and loans to the state and local governments, or two institutions, the Reconstruction Finance Corporation and the National Development Bank, could operate under a single Board of Directors. The RFC could handle all the loans to private business, and the National Development Bank the loans to state and local governments. Each of the two lending organizations would be operated under a president or executive officer appointed by the Board of Directors. The Board of Directors would also be required to see that there was coordination between the two lending units to maximize economic development in areas where new construction or improvement of public facilities is needed to enhance the efficiency of the private business activities being assisted. Public facility loans should also be available in other areas in need of such loans to renew or expand public facilities required in the local economy. The issuance of capital stock of up to $5 billion to be subscribed by the Secretary of Treasury for the RFC and also for the National Development Bank should be included in the bill combining both agencies. However, the authority to issue obligations should be limited to five times the amount paid in capital stock for each of the two lending organizations. At a later date, the authority to issue obligations could be expanded, as needed.

The more detailed powers for the RFC to be spelled out in enabling legislation would give guidance as to the directions and purpose to the operations of the RFC. One specific provision is considered of particular importance by the AFL-CIO. That provision would provide that all obligations of the Corporation which are purchased by employee pension benefit plans shall be guaranteed by the Secretary with the full faith and credit of the U.S. It is considered highly desirable by organized labor that pension funds should be used for reindustrialization and expansion that would provide employment, but with adequate security for the pension funds.

There should be added a requirement for an analysis of the impact upon areas that will be affected and upon the workforce employed in the affected industries. There will, no doubt, be a need for retraining of people to work with advanced technological production methods. There may also be displacement of people in some of the industries. Provision must be made for advance warning, adequate compensation to those affected, for retraining, job placement assistance, relocation assistance, and a pension supplement where age and other factors make it appropriate. Every consideration should be given to avoiding such displacements;

but where it has a significant lasting adverse impact upon local government revenues, there should also be provision for compensation to the local government. Where there is a growth boom impact, at least temporary federal assistance for community facilities may be needed.

## Types of Reindustrialization Efforts Needed

Major industries, such as steel and automobiles, need to go through a modernization retooling, involving tens of billions of dollars, to raise productivity and restore them to a better position in international competition.

Publicly owned infrastructure which is suffering from deferred maintenance must be improved, including replacement and expansion of large components in water, sewer, highway and mass transit systems, to enhance efficiency of economic functions and livability in major urban areas. Such improvements could also maximize utilization of existing urban plants and minimize costly replication of facilities elsewhere, and help in dealing with large concentrations of unemployed youth.

As mass transit is encouraged, there will be an increased market for rolling stock, the buses and subway cars. Production capacity for the rolling stock in the country has to be expanded or the U.S. will be increasing its imports.

From a national, as well as local economic perspective, as reindustrialization programs are instituted under federal auspices, insofar as possible, investment should be targeted to the urban areas that have underutilized private and public capital facilities. For optimum benefits, the public financial assistance and the private capital investment that it can leverage should be directed to enterprises with a commitment for employment of unemployed people in the designated areas. Such training and retraining as may be necessary could be done during the period of plant and equipment modernization and retooling to enhance growth in productivity.

To summarize, the nation cannot write off major industries in this country without paying for it dearly in the future. Nor can whole cities and regions of America be allowed to decay, without serious social and economic consequences.

It is important that America as a whole remain a diversified industrial nation, and this can best be accomplished through the active participation of government, labor, and industry in a major reindustrialization effort.

It is time for the U.S. to formulate a national industrial policy and abandon the irrational attachment to policies that threaten to bring about the wholesale condemnation of entire industries and regions. The AFL-CIO rejects the Administration's attempt to cast government as the whipping boy --government spending, government deficits, government taxes, government borrowing, government employees, etc. They are not the cause of every problem that can be identified as the Administration would have the people believe. The solution to America's problems is not to hamstring the Federal government by cutting its programs and its sources of income and weakening or undermining its laws, regulations, and standards used to protect health, safety, civil rights and the environment.

It is unconscionable to return to the burned-out America of the 1930s, when the willy-nilly movement of investment capital left the farm mortgage foreclosed, the top soil eroded and no hope of revival because not enough Americans had the purchasing power to lift the economy or re-open a bank. The AFL-CIO believes that government must enter into a new partnership with business and labor to revitalize the nation's economy.

Mr. **Roberts**. Congressman, may I just briefly correct the record?

Representative **Lungren**. Before we do that, Mr. Roberts, because Mr. Samuelson has to leave early, let me try and direct some questions to him first and then we'll go back and do that, if that's OK.

Mr. **Roberts**. Oh, I see. Sure.

Representative **Lungren**. However, if it's just a sentence or two, we'd be happy to let you do it.

Mr. **Roberts**. It's about three sentences.

Representative **Lungren**. All right. Give your three sentences. [Laughter.]

Mr. **Roberts**. I just would like to briefly correct the record. Mr. Oswald is not very well informed about what I said 2 years ago. In fact, his statement completely misrepresents what I said. I said that the delay of the tax cuts was recessionary and I was unequivocal about it. And I said that the Federal Reserve's monetary policy was too tight and would result in a recession.

These statements abound in the public record.

Representative **Lungren**. Thank you. It appears that we have some disagreement on industrial policy here. One of the things that I've noticed in the press recently are some comments by those who support the idea who say that, whether we like it or not, we do have an industrial policy. In some ways, when I look at what they say, it seems to me they say the lack of industrial policy is proof of a decision on an industrial policy. Therefore, we have one.

Professor Samuelson, how would you respond to that statement, that whether you like it or not, we already have an industrial policy and all we ought to do is determine upfront and comprehensively what that industrial policy is, as opposed to having it there by ad hoc decisionmaking.

Mr. **Samuelson**. I think the useful germ of truth in that statement is that it's important to study and concentrate on what are the factors that lead to a changed occupational structure of the American society away from manufacturing. And I would like to agree with Mr. Oswald that the level of the American dollar in the foreign exchange market is a very crucial factor. And what we do in the field of tax policy, what we do in the field of Federal Reserve monetary policy does have punitive effects on the level of the dollar in a regime of floating exchange rates. I have to diagnose the situation for the middle 1980's as America being an undertaxing country in comparison with what the electorate causes to be spent by the Federal Government. What the American electorate has agreed to be the taxing of the American people results in a structural deficit for the middle of the 1980s, a structural deficit that can be expected to still be there when we have returned to higher employment levels and the recession is a memory.

Now there's a very substantial body of analysts who believe that the highness of our real rates of interest are related to the size of the structural deficit. So, if somebody wishes to say we are implicitly following an industrial policy because we are following the devil's recipe to run a low capital formation and a high-consumption economy, a policy that puts the real rate of interest high and that attracts lots of funds from abroad on a capital account. and makes it extremely difficult for historic exporters to continue to be competitive—then I have no objection to that.

But we mustn't then say "Since we are following an implicit industrial policy, anyway, we ought to look a little bit more favorably, without further examination, upon some specific new snake oil reindustrialization policy."

I'm a longtime supply side economist. I'm not for a snake oil supply side economics. But I'm for implicit reindustrial policy.

For example, the kind of evenhanded protection for which a case can be made by economists and which means more to Michigan and the areas which have lost ground is to study how to depreciate the dollar. How can the high value of the dollar attributable largely to capital account be alleviated so that on current account, we're able to earn our way, as every nation over any period of time must do, by having a balance between our exports and our imports.

I have urged upon the Japanese, whom I have been nagging for two decades now, that they, being so clever and everyone of them being 7 feet tall, that they work out a way to bring the yen down in price, not solely in the interests of America, not solely in the interests of some former economic interest group in America, but in terms of their own long-run self-interest.

Representative LUNGREN. Thank you. I would invite any other panelist to respond or add; debate.

Mr. ROBERTS. I would like to say something about the alleged overvaluation of the dollar. I have trouble understanding the concept of an overvalued dollar in a system of flexible exchange rates, where the market values the dollar every day, in fact, by the minute. I can understand an overvalued currency in a situation of fixed exchange rates. But in a system of flexible exchange rates, an overvalued currency is a very difficult concept. How do you know it's overvalued and how do you know how much it's overvalued? And in what way is it overvalued, because, really, the notion of value is what the market puts on it.

I also am a bit puzzled because, normally, you don't have a high value of the dollar, or an overvaluation, when you have an excess of imports over exports. Normally, in a situation where your balance of trade is against you in that way, your dollar is depressed and pushed down. Yet, we have a very strange situation where we have deficits in our trade accounts with foreigners, flexible exchange rates, and an allegedly overvalued dollar.

Mr. ALBERTINE. Congressman, I just very briefly would say you're absolutely correct. That is the argument you hear all the time. We have an industrial policy now. It's, of course, a disastrous industrial policy, for one thing. For example, we over, in my judgment, at least, relative to the point that Professor Samuelson was making—we subsidize housing, in my judgment, much too much and as a result of that, we have lesser sources for the capital-intensive sector. We have a regulatory system which our members are incapable of figuring out. We have a tax system that changes every 2 or 3 years. We have asymmetries in corporate rates that make absolutely no sense.

The irrationality of the industrial policy we have now is manifold.

Now the problem I have, however, is that the same people who have put this industrial policy into place are the people we're asking to rationalize the industrial policy. And I wonder whether that will happen. I suspect that if the Congress of the United States pursues an industrial policy that decides, for example, that we ought not to subsidize housing to the level we now subsidize housing, I suspect that the Congress of the United States would be inundated with people from the housing industry who will convince, I suspect, Members of the Congress that that's an unwise policy.

The industrial policy we have now is irrational. But I fail to see how it is that the Congress, which has put that policy into place, somehow is going to get ultimate wisdom and rationalize it in the next 6 months or 12 months or 18 months.

Representative LUNGREN. Mr. Oswald.

Mr. OSWALD. I would just like to take an example of one recent Government action that is described as a general neutral action in terms of policy. That was the accelerated depreciation of 1981. It was described as bringing about a neutral 10–5–3 new standard of depreciation. Well, that had a very differential effect on different industries. Industries such as communications, petroleum, and utilities, which had prior to passage of that act, expected lives of 20 years, were reduced in terms of their life for depreciation purposes to 5 years.

Steel, auto, and other industries, that were described as industries that particularly needed help for capital formation, received very little help because their existing life had already been 6 to 8 years, in some cases 5. So that there was very little differential, very little effect, on the industrial needs of those industries.

So that what was described as a neutral policy provided large sums of money, nearly a third of the total that was involved in the tax reduction of 10–5–3 to the communication, petroleum, and utility industries.

So I think that, yes, we do have an industrial policy, but we don't recognize it for what it is.

Representative LUNGREN. Congressman Scheuer.

Representative SCHEUER. Thank you, Congressman. Mr. Samuelson, I'd like to address a couple of questions to you, since you're under some time pressure and have to leave.

You mention here somewhere in your remarks that when you've been hit by lightning, it doesn't help much to shoot yourself in the foot.

But when you're the guy who tore down the lightning rod and caused yourself to be hit by lightning through your own damn fool decisionmaking, it may help to divert the attention of your family to shoot yourself in the foot and dance around in pain. [Laughter.]

So we're getting——

Mr. SAMUELSON. Could I reformulate your question [laughter] and give an answer to it? I believe you're asking me whether, by virtue of having stood under a tree and have just been hit by lightning, whether it is then inadvisable to leave the vicinity of that tree for safer spaces. And my answer to you would be, in that case, I would not call that a shooting yourself in the foot situation. I would call that a rational and reasonable adaptation to what is happening.

The only point in my analogy is to suggest that it is not a rational and helpful adaptation to the changing winds of dynamic comparative advantage to utilize protection, although I understand fully how tempting it is to assay that solution.

Representative SCHEUER. Well, it has tremendous political appeal. First of all, it diverts the attention of the world from the really egregiously poor decisionmaking that put us in some of the positions that we're in with an industrial plant in the areas of steel and perhaps a few others that are a generation obsolete, where we fail to make proper investments in research and development in plant and equipment and now, after a generation of experience with the steel companies putting their cash flow into international conglomerates and buying oil companies and what not, they now find that they can't compete because their plants are mostly 30 and 40 years old. Then they come to Congress asking to be enveloped in a cocoon of protectionism to protect themselves from those naughty people overseas who have trained workers—productive workers—in highly efficient, large-scale plants. And hence, the productivity of an already highly literate and productive work force that goes out on strike—and I take the case of Japan—about one-fifteenth per capita worker of the rate that we go out on strike.

There's something wrong with that.

But the appeal to protectionism, as expressed in legislation like the "Domestic Content Bill," is a very seductive one. And last year, when I was dilly-dallying with the idea of voting against domestic content, and I looked at the scoreboard before I cast my vote, not a single Democratic member of the New York delegation had voted nay.

So it passed overwhelmingly, although many members, I think, share some of the reservations that you have expressed. And basically, there's a lot of concern. By the process of "dynamic comparative advantage"—well, it's quite true that the four Japans that you mentioned—South Korea, Hong Kong, Singapore, and Taiwan—among them, plus Japan, of course—they all learned a generation ago how to control their explosive rates of population growth so that they could invest some of their capital, not just in keeping people alive by importing food, but by making them literate and investing in plant and equipment and making them productive.

So we have what were comparatively low developing countries now becoming developed countries. They're still comparatively low wages compared to us, but very productive and very efficient. And there doesn't seem to be much hindrance in sight.

To what extent do we want to see industry after industry from the United States just afloat abroad in this irresistible and inevitable, ineluctable process of "dynamic comparative advantage"? That process hurts America. What are we going to do about this subgroup that we seem to be developing about which you've been reading, we've all been reading in the papers, a whole generation of American youth who are growing up that seem to be able to finish 12 years of schooling and come out of it all really quite unable to read, write and count. They're functional illiterates and they aren't very productive in the workplace. And those of them, 300,000 of them, who have been let go in Detroit from the auto lines are going to have a hell of a hard time coming back because they don't have the skills that are going to enable them readily to find a job.

What do we do about the structurally unemployed? As a matter of humanity and compassion and decency, shouldn't we be doing some planning here in Washington to assuage some of the cruelty in this ineluctable process that you have described of industries just floating from west to east, and do something to create an environment in which anybody who wants to work can work, even if, perhaps, they aren't as productive and as literate and as numerate as we would like them to be.

We still have a country. We don't want to see blood running in the streets. We want to have a sound, sane, whole society that isn't riven by racial and ethnic and class divisions, conflicts between the haves and the have-nots. We don't want to see that get worse. We want to see it get better. And we don't want to see it get better by giveaway programs, of programs that pass out money, but don't seem to be helping people gain in self-esteem and satisfactions, but help them gain in productivity and self-image.

It's not wholly economic questions that we're facing. They're social questions and political questions.

So industrial policy takes on a little bit more than economics. If it were just economics, I might say with you, well, let's sit back and watch the market forces play themselves out and these industries are going to go where they have to go and the people who will be helped will be helped more than the people who will be hurt. An awful lot of those people who will be hurt are going to be Americans and what are we going to do about them?

Mr. SAMUELSON. Well, you touched on many issues. In response, let me say just a few things. One, the position which I am outlining here is not based upon a philosophical repugnance to interfere with the workings of the marketplace. There are many observers who, as a matter of principle, as a matter of value judgment, believe that the business freedoms and the personal freedoms of the market ought to be sacrosanct. And they would be unwilling, even if there were efficient interventions, to say a good word for them.

That is not my position. I am examining—trying to examine—each proposed intervention to see whether it delivers the good things that motivate it. And so I think it would be very important precisely when concentrating on the human aspects of the problem, to try to consider two different paths of future history. One in which, because we are sensitive to the human hurts that come along the way, as dynamic competitive advantage works itself out, we follow in America the pattern of protection.

And, by contrast, the alternative to that.

Professor Kaldor's analysis leads him to believe that protection would preserve the American workers from suffering. My reflective judgment is otherwise. In saying this, I'm trying to take the viewpoint of all of the American workers, not a specific group in one part of the marketplace. I'm trying not to consider just the short-run—trying to remember that the future is longer than the present.

If protection could raise the U.S. average real income, I would come here and spell out in detail just what kind of a protective policy I thought would be most suitable to meet the needs.

But the thrust of my testimony is the negative of that. I would like, with your permission, to include in the record at this point, a paper prepared for a German symposium a couple of years ago.

It's entitled "To Protect Manufacturing?"

Representative SCHEUER. Could we run that through the Library of Congress' translation service so it would be in English by the time it gets into the record? [Laughter.]

Mr. SAMUELSON. Well, Samuel Johnson said, "Sir, I can provide you with an argument, but not with an understanding." [Laughter.] So I leave that to you.

Representative LUNGREN. The paper will be inserted in the record at this point.

[The paper referred to follows:]

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# To Protect Manufacturing?

by

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The third quarter of the Twentieth Century was a golden age of economic progress. It surpassed any reasoned expectations. And we are not likely to see its equivalent soon again.

International trade contributed mightily to the postwar miracle, something that could not be taken for granted in 1945. The depression decade of the 1930s saw the breakdown of the gold standard; it involved competitive tariffs, quotas, and selective exchange controls designed to protect overvalued currencies and domestic employment. The Bretton Woods system was set up in 1944 out of the fear that, after war's end, there would be a continuation by other means of the interferences with free trade and the international division of labor that had become customary during the 1930s.

When we congratulate ourselves on getting rid of the Bretton Woods fixities of parities, it is only fair to remember that the quantum of international trade surpassed the miracle rates of domestic growth in the sensational 1950s and 1960s; and it was under the Bretton Woods regime that this salutary development took place. Japan, the Common Market countries, and all those regions that have increased their share of world GNP at the expense of North America the leader, should keep the flowers growing on the grave of the Bretton Woods system, in grateful remembrance of its transitional role in rectifying the initial peacetime undervaluation of the American dollar. It was not a good thing for the world that the United States enjoyed in 1945 almost half of real world GNP. And it is not a bad thing for the United States that our share has been reduced to about one-quarter of world GNP: our people have grown in average per capita affluence while Sweden, West Germany, and Switzerland have gained somewhat on us; under healthy world development the U.S. share of the world total will continue to drop, even though our 6 percent of world population continues to be at the top of the scale in *per capita real GNP (correctly* calculated à la Professors Kravis, Summers, Heston, and their Pennsylvania colleagues).

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### *Free Trade at Bay*

My concern is with the future. Comparative advantage is not static. Economic law suggests to me that much of manufacturing industry will try to leave Western Europe and North America under free trade. This is not a new thing. It is not a peculiar consequence of the presentday regime with its reliance on floating exchange rates. But it is an intensification of older trends that will certainly put a strain on the ideology of free trade.The political pressures for protectionism, I suspect, are about to intensify.

The purpose of economic theory is to alert us to the direction of change, to a reasoned evaluation based on evidence of the probabilities and improbabilities. Along with this positivistic service, economic theory also has the normative purpose of setting out the likely consequences of alternative policy programs. Until electorates and leaders learn what are the menues of choices, they cannot arrive at their optimal selection of acts.

The plain person, unburdened with knowledge of economics, is prone to fear that free trade will wipe out jobs and decimate real incomes. Some sophisticated economists, such as Nicholas Kaldor and other U.K. Labour Party analysts, agree with the notion that loss of manufacturing jobs by free trade will bring loss of national standard of living.

A diametrically opposite conclusion is presumed by the unthinking ideologue of free trade: to him, so to speak by very definition, what free trade brings is the optimum; on this view, a world without tariffs and artificial trade impediments, would have to bring to every region and every person an ever increasing real income. Although Kaldorian mercantilism might be empirically either wrong or right, the deductive syllogism that free trade maximizes each market participant's welfare is logically false. Even under the strict conditions most suitable for perfect competition particular market participants win and lose from ever-occurring shifts in supply and demand.

The correct *theoretical dogma* on free trade is this:

> Under conditions suitable for perfect competition, free trade is efficient in the sense of wiping out *global deadweight loss*. If you deviate from free trade, those who gain from so doing gain less than those who lose lose – in the sense that the losers could afford to bribe the winners to desist from protectionism.

It is naive to think that it is politically feasible (or even desirable) for protectionism in Western Europe and North America to be bought off by such developing industrial states as South Korea, Taiwan, Singapore, or Hong Kong. Aside from political unfeasibility, bribes from the less affluent to the more affluent are not ethically aesthetic.

The free trader, emancipated from false theoretical dogma, will rely rather on an empirical long-run presumption:

> Eschewing trade impediments with their concomitant deadweight losses is likely to bring benefit to a *random* person or regime, in the *long* run, *averaging* out the happenstance of particular gains and losses resulting from supply-and-demand shifts in tastes and technologies. ("What you lose on the swings, you gain on the round-abouts...")

Concretely, as applied to Europeans and Americans apprehensive about their losing comparative advantage in manufacturing, the free trader argues:

> It is not clear that the already industrialized societies lose more than they gain from the development in the new industrial regions of comparative advantage in manufacturing. Cheaper imports have contributed much to the real living standards of the affluent nations. What Nagoya gains is not necessarily what Detroit, Turin, and Düsseldorf lose. What South Korea gains, may be part of what North America and Western Europe stand to gain.
> Moreover, suppose it should turn out to be the case that supply-and-demand shifts are tending to hurt the richer nations. Not all hurts can be usefully assuaged by protectionism. Often quota and tariff interferences will add some self-inflicted wounds and leave you twice badly off, at the same time that some deadweight loss is being borne by the developing nation.

### *How Can Imports Hurt Us?*

Noneconomists naively assume a fixed number of jobs. If Japan gets some good jobs that Germans used to have, that is supposed to be a clear cut loss to the German nation.

Economists know better. We know that good German jobs in the textile industries are often lost when better German jobs in the chemistry and machinery industries raise general wage rates above what can keep the German textile industries alive in the face of Taiwanese competition. Japan, having won much of New England's share of the world textile market, in turn loses textile jobs to Korea when Japanese textiles can't hold their workers against the pull of better paying Japanese industries.

Suppose that the Gang of Four – South Korea, Taiwan, Singapore, and Hong Kong – improve their technology dramatically. How does that affect U.S. and German workers and capitalists if we continue with the same slowly improving technology?

I must distinguish[1] whether the Asian improvement came

1. in goods they traditionally export to the West,
2. in goods that have such heavy transport costs that they don't enter into trade on the export or import side,

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[1] See Dornbusch, Fischer, and Samuelson [1977] for a convenient model to analyze these problems.

3. in goods that can't in any case be produced in the face of Western competition,
4. in goods that we used to export to them but which now they can export competitively to us or at least produce for domestic consumption,
5. in some combination of the above four catagories.

*Case 1.* The first of these categories is the one dogmatic free traders concentrate on. It is an unmixed blessing to the West to get our imports cheaper. Our terms of trade improve. Our *real* wage rates rise. Our consumers' surplus from international trade rises. Job opportunity rises even ifi our non-tradeable-goods industries and in the industries where our exports are unchallengable. The resulting increase in our general wage rates, the free trader will admit, does drive out of existence some borderline industries previously just hanging on to their markets in the face of actual and potential Asian competition. But, the free trader can correctly point out, these industries lose workers because workers are bid away by now more-productive job opportunity.

Abroad, one can't be sure. Probably real wage rates rise there as a result of their technological advances. Certainly that must follow if their new supplies are not so flooding world markets as to turn their terms of trade against themselves by so much as to make their technical improvements be immiserating changes.

*Case 2.* Europeans of goodwill can bless technical changes that make local Korean goods more available to previously poor Koreans. To the extent that this releases resources into Korean export industries and also enhances Koreans' demands for goods imported from the West, this case's technical change will improve the West's terms of trade, its real incomes, its consumers surplus from trade. Though Asians may lose consumers surplus, they probably are net benefitters from the technical change. (Only if demands for their exports are so inelastic as to make the induced deterioration of their terms of trade great enough to offset the boom of domestic productivity, would Asians be hurt in this second case.)

*Case 3.* I mention this case though it has no effects whatsover. A great change is unlikely to occur, or be recognized, in an industry that Asia can't afford. If now Asia still can't afford the industry, even if it comes closer to being able to do so, there will be no effect on anyone.

*Case 4.* Here the honest free trader must admit that the West could be hurt by better productivity abroad. The West loses consumers' surplus from trade as the West's terms of trade are hurt by undermining of her export-goods prices relative to her import-goods prices.

The extreme case, would be where South Korea came to have *exactly* Germany's *comparative* productivities, industry by industry. (Warning: even if *every* Korean industry came to have exactly one-half Germany's real productivity, when Korea's real wage rate were one-half Germany's all trade between the two countries would cease.) If Asian technical change occurs thus in all the goods Germany used to export, and all trade ceases, Germany has lost the consumer surplus formerly enjoyed from trade[2]. This is the germ of truth – one of the few germs of genuine truth – in the Marxian notion that the West might lose something if the East became exactly like the West.

Job opportunity in the West might temporarily suffer if money wages lagged in Asia behind the growth in productivity, creating an export surplus there and a trade deficit in the West. Floating exchange rates would take care of this: as the Western currencies depreciated relative to the Eastern, full employment equilibrium would be restored in both places; the final drop in Western *real* wage rates cannot be blamed on the mechanism of floating, since it is an unavoidable implication of Case 4's technical change.

Note this: Even when the West is hurt, there is nothing that can be done about this hurt in the case where the East comes to have the exact same comparative productivities industry by industry as the West. Even acting in concert, the West has no monopoly power to exploit vis-à-vis the East. Admittedly, in less extreme versions of Case 4, if concerted action by the West exploits some of its monopoly power that had previously been unexploited, some (or all) of the induced loss in Western welfare might be mitigated – a problem I return to later.

Before leaving positivistic analysis of how Western welfare is affected by Eastern inventions, I ought to deal with Club of Rome problems. Oil and other geologic deposits are limited. If a Korea joins the ranks of the affluent nations much as Japan had done before, Korea will have real bidding power for OPEC oil and limited food supplies. Western Europeans and North Americans will have lost a little of the privileged access to bidding for those scarce resources which their previous exclusive affluence had given them. Again, the Marxian suspicions of conflict of interest between the rich and less-rich regions is seen to have some basis in fact.

Protectionist resistance to manufacturing imports is not a weapon well gauged to counter the West's potential loss in welfare. The West's knife may cut against itself in scratching at its rival. Let us see why.

### *Monopoly Power to the Rescue?*

I have no wish to rebut dogmatic protectionism by dogmatic libertarianism. A fairminded economist must admit that North America and Western Europe, if they could collude to act concertedly in their own self interest, may be big enough to possess some genuine degree of exploitable market power (monopoly power). It is not a theoretical impossibility that, in departing from free trade in a way that is optimal from their selfish viewpoint, they might force a loss on the newly industrializing regions that exceeds the global deadweight loss induced by newly contrived imperfection of competition.

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[2] If Asian technical change proceeds even farther, cheapening relative costs of the goods that have shifted over from being their imports to being their exports, such further changes are covered by my previous Case 2 and don't have to be analyzed here in Case 4.

Theoretical possibilities have to be judged in terms of practical possibilities and empirical quantitative importance. I know that a tight cartel of the affluent nations is unfeasible: I doubt that a loose confederation, in which the separate European and American countries simultaneously give in to their domestic union and business manufacturing interests, has much monopoly power to exploit.

## *What Is to Come?*

Rational world economic development will probably call for the following end of century trends:

1. Manufacturing, particularly the simpler processes that all can imitate rather easily, will move toward the developing world.

2. North America and Europe will shift resources toward sophisticated technologies, service industries, and headquarter functions – in that way contributing both to their own self-interests and the interests of the less affluent.

3. The successful developing societies will gain on the leaders in real per capita incomes, just as the United States was gained on in the 1945–80 period. Most of the newcomers' gains will come out of *their own enhanced productivities* and not out of the hides of the peoples less affluent than them or more affluent than them. However, to the degree that global geologic resources are unrenewable and limited, the new bids for such resources by Koreans and Japanese must contribute a little toward more unfavorable terms of trade facing Indians, Chinese, Eastern and Western Europeans, and Americans all over the New World.

4. Only after the LDC's that have not yet experienced a manufacturing takeoff succeed in their hoped-for industrial revolutions and only after they have succeeded in controlling their explosive population growths; only then will the affluent nations stand to lose some of the historic consumer surplus that they have enjoyed from international trade – trade that historically involved imports of fiber, food, and ores produced in the tropics by low-wage populations. Hong Kong and Singapore, to say nothing of Taiwan and Korea, have up to this time harmed the West little by reducing their exports of staples. If that happy day comes when South-east Asia, Africa, and Latin America afford a comfortable middle class standard of living to their stabilized populations, we should be content to depend upon mechanized mines and farms for our needed raw materials, uncomplainingly paying the necessary costs for the goods we need.

5. With the demise of colonies, the evidence mounts that India is not poor because Sweden is rich or because Citibank is profit seeking. If all the globe

were as poor as India, the next few generations of Indians (and of Mainland Chinese too) would face less favorable rather than more favorable prospects. Such a conclusion runs squarely contrary to the run-of-the-mill Marxian ideology. Before 1917, when the quantitative importance of colonialism could only be guessed at and prior to availability of experience with actual real growth under Soviet and East European socialism, the evidence bearing upon the putative validity of the Marxian ideology was necessarily scanty. In the Age of Lenin and Castro, the reasoned odds narrow down.

## *Qualifications*

Comparative advantages are to be reckoned in dynamic not static terms. Mexican manufactures not yet viable in 1981 will undoubtedly hold their own in 1991. If empirical evidence and cogent logic supported Kaldor's contention that U. K. manufacturing will experience in the future productivity growth far exceeding that of non-manufacturing activity, a case could be made for temporary quotas to protect British industries. Both logic and experience make me skeptical that such a bootstrap operation would raise U. K. real earnings or minimize their rate of decline. For France, West Germany, Canada, and United States, a similar verdict seems indicated.

Some protectionism must realistically be expected to be in the cards. Particularly as I warned in my 1972 little Nobel Lecture, "International Trade for a Rich Country" (SAMUELSON [1972]) it will be a bit like Marie Antoinette's admonition on diet to counsel the affluent nations to become headquarters economies, if the mutually-beneficial flow between countries of capital principals and earnings will be rendered impossible by sovereignties that refuse to tolerate or honor a code of foreign investments. If a rational global division of labor is inhibited by nationalistic opposition to foreign investment holdings, some manufacturing industry ought to remain in the affluent West. Under floating exchange rates the industrial nations will achieve the efficient kind of protection that economists approve of – namely, real exchange rate depreciation down to the point where domestic manufactures can still survive against import competition.

At this point *union* protectionism will loom as an important influence. In my own country, trade unions are not in a vibrant epoch of growth. Only in manufacturing and in government can they maintain a tenacious hold. With the electoral shift toward the right and toward contained government expenditures, union progress in the public industries has slowed down. Now the tendency for manufacturing to migrate also hits the unions in their heartland.

The economic effects of trade unions are difficult to agree upon. But this much is clear from the history of the railroad and coal sectors:

> *Unions are important in determining how an industry dies.* It is against their very nature for trade unions to engineer reductions in real wage rate to fend

off declines in employment. A Detroit worker may not be worth $ 18 an hour, compared to a Nagoyan worker paid $ 8 or a median American earner paid $ 10 or less. Even if maintenance of the auto builder's wage at levels of $ 18 an hour will gradually phase out much of the American industry, captains of the trade union ship will go down with all their flags flying, taking down all hands to sink with them. This is not because union officials are stupid or vicious. It is because they are human, determined to do what they have been created to do – to fight for highest possible wage conditions for their members.

The public at large, including median wage earners, knowing all about inequalities in a market economy and realizing that they each might win the lottery ticket of an $ 18 an hour job, are unlikely to judge the union officials and members harshly. The small self-interest of many in enjoying cheap imports weighs less as a political influence on legislators contemplating quotas than does the concerted self-interest of the few who work or invest in the auto and steel industries. Particularly is this so when most people fail to perceive that protecting a high paid job may actually be at the expense of *lowering average national real wage rates.*

We economists are needed, to weigh the costs and benefits and appraise the merits and demerits of the contending parties. This is an area where we can be proud of our craft.

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Representative SCHEUER. Now, there are some alleviations of the harm. They're already built into legislation. We have an assistance program which is triggered by cold winds from international trade. Those, in principle, are part of the mutual reinsurance network that our society has created for itself. I think that one needs constant vigilance that you don't slow down and perpetuate the adjustments that do have to be made by the way that those assistances are administered. But I think that they are extremely important. I don't think you'll get a mobile society which will be responsive to changing market forces if the full impact of those market forces upon particular groups that are hurt are disregarded in the society.

So I'm not really addressing myself to that particular part of the issue which is a very important one.

Representative LUNGREN. Professor Samuelson, it appears, if I could just boil down what Mr. Roberts stated, there are two types of industrial policies we are considering. The one is toward more centralization—some call it cooperative. This type is based upon a central decisionmaking body, whether it primarily is government or a combination of government and some other groups—I guess it would have to be the elite of the labor movement and the private industry and so forth. Or the other one which he suggests is toward creating an economic environment or a thriving private business, and Mr. Albertine would probably say entrepreneurship.

If those are the two general directions that people appear to be finding themselves in when they talk about major industrialization or industrial policy, where ought we be going in that debate? I know there are whole shades and gradations within this issue, but where ought we to be moving?

Mr. SAMUELSON. I think that in the general, broad supply side picture, there are activities in the society which are not profitable for private people to do, necessarily. For example, the creation of fundamental knowledge, which is of great importance for the future Federal Reserve Board index of production. There's a great gap in time. And no entrepreneur could invest "canny dollary" into something whose sole purpose was to add to the Federal Reserve Board index of production 15 years from now.

Yet, many of the most important institutions of society—the financing of education, the financing of higher education, the financing of much biological health research—these are nobody's business to do, but it is society's interest to have them done. That is where I think the society and the Congress should be interested in supply side policies which would have a great effect upon the international competitiveness of American industries.

I'd rather not put the problem in the crudest philosophical terms and ask, does every country banker have a better handle on allocating the fluid savings of society than some Ford Foundation or some bureaucratic born in Washington? Rather, you have to ask yourself about a proposed activity: Is this something that is so risky, so big, and yet, which has a social fallout which cannot be appropriated as a property right by anybody, which, therefore, won't be done by spontaneous laissez faire—is this something which ought to be considered by the Government?

And I think these problems will arise. They arose in the past in an acute and in an accidental way. Much of the technological quantum jump which took place in the immediate post-World War II period was a fallout from the vast Pentagon-financed research during the war. I'm thinking of the communications industry, the development of servo mechanisms, the development of penicillin itself. These things we lived upon until, later, there was a fallout from the aerospace industry.

But now the problem presents itself in concrete terms as follows. The Japanese, whether they are doing this in an absolutely efficient way or in a bungling way, have made it a goal, an immediate policy, to have a quantum jump forward in high speed computing. And the Congress should be considering whether there does exist in the Government whether in the NSF or NIH or somewhere, some avenues where, if it was in the Nation's interest to have a large-scale program of the sort that would not be financed elsewhere, this could get financed. This is not a question of picking commercial winners, because I think commercial people are better at picking commercial winners than noncommercial government. But when it's the problem of picking things with strong externalities, of knowledge creation, then its is the proper function of government.

There should always be a burden of proof and cynicism against particular proposals that come forward in this regard. But they should have some court in which they will be considered.

I think there are dangers, but now I am leaving my field of specialization, in corporatism parliaments in which Mr. Oswald is sent by his employer to be an effective speaker and where the NAM will have its representatives—and then you have the job to try to reason out whether your reindustrialization policy, for which you have the name, but have not yet had the policy, whether it's really working or not.

And suppose, for example, it isn't working. And maybe it isn't working because it doesn't exist. It's only the name. Since it apparently hasn't saved the programed number of jobs, the next step may be a stop-gap measure in the form of a quota. It will allegedly not be a permanent quota because our intentions are pure.

Well, your Parliament might mobilize some forces for quotas, which analysis suggests will not deliver the goods, and which wouldn't otherwise have been there—because who wants to stand up before evening television night after night and be pilloried as an enemy of society who is not willing to go along with these programs that have such good purposes.

I think I've given you an answer to your question in a general way.

Representative LUNGREN. I appreciate that. I'm going to check the record for it. [Laughter.]

I just wanted to remind you that it's past time that you had to leave. One of the things that I enjoyed hearing from you, though, is that you are a supply sider. I'm not an economist. I call myself a supply side politician. But just to show how we could look at things differently, you suggested that the United States has some difficulties now because we're undertaxed for what America wants. A supply sider on another side would say that perhaps we're overspending in comparison to what the American consensus is for taxation.

It's analogous to the half-full, half-empty glass.

Mr. **Samuelson**. Yes. But remember, you have to live with the spending that you do in the end.

Representative **Lungren**. I appreciate that. Professor, Congressman Scheuer wanted to know if you had a chance for one quick question.

Mr. **Samuelson**. Yes.

Representative **Scheuer**. Do you have to catch a plane?

Mr. **Samuelson**. Yes.

Representative **Scheuer**. Then go ahead. [Laughter.]

Mr. **Samuelson**. I thank you.

Representative **Scheuer**. I'll ask the rest of the panel: Is our problem that our present industrial strategy, which is no industrial strategy—it's reliance on market forces—is it that it's misallocating capital and not providing enough ready capital to high risk, innovative, high tech industries, innovative industries that could sail through international competition knocking our foreign competitors right on their keesters, to quote a phrase? Or is it that our tax system, perhaps, doesn't encourage enough capital from being invested, both in existing industries or in new industries?

In other words, do we tinker with the tax system to encourage more savings so that we get something approaching the rate of savings that the Japanese enjoy or do we say, well, there's something wrong with the way the whole schema works now because we're putting all of this money into housing and even for poor people, we invest $70,000 or $80,000 for a poor family and then $5,000 or $6,000 a year subsidy. But they're undereducated, and they're underjob trained, and they're under a hell of a lot of other things. And to invest that amount of capital in their housing is just lugubrious misinvestment of funds for the benefit of that one family.

Are we misallocating the existing pool of funds or is the problem that we don't have enough funds and we ought to tinker with the system to raise the level of capital saving and therefore, investment? Do any of you care to respond?

Mr. **Albertine**. I think we're doing both. In the first place, Mr. Scheuer, I think you're absolutely correct that one of the fundamental problems is that our savings rate is too low. I was in Japan 3 or 4 weeks ago and had dinner with a group of people from the Bank of Tokyo who told me that an average family of four, using all of the gimmicks available in Japan—IRA's, Keough's, putting money in your post office system, and the like—could save annually $70,000 tax free. We have nothing which allows the average American to save that amount, or anything close to that amount tax free.

So, obviously, the low level of savings in the United States versus Japan is a terribly important factor. And second, I think that the Congress, my own view, at least, is that the Congress has undertaken policies which have, in fact, misallocated some of the savings which we now have.

It turns out that in the 1970's, people, for example, like myself, who are relatively average income individuals, found that the basic way to save is, in fact, through real estate. So I think we have to do both.

With respect to the issue that you raised a moment ago, I think it's terribly important to look at this Hatsopoulos study which was done by the American Business Conference, and George did testify several weeks ago. It turns out that the cost of capital in the United States, we argue, is about three times as high as the cost of capital in Japan.

Our numbers show that if we were to lower the cost of capital by one-half in the United States, we would generate about $3 billion of additional investment opportunities available for the steel industry alone. And our view is that there may be steel firms that won't make it. There may be steel firms that are mismanaged. But a $3 billion infusion by the steel industry in its productive capacity, in fact, would be a very healthy development.

Representative SCHEUER. Of course, the steel industry has had I don't know how many multiples of 10 times that $3 billion over the last generation to invest. It's just that they made the policy decision not to invest in their own plant and equipment and not to invest in their own research and development, but to invest in conglomerate adventures abroad.

Mr. ALBERTINE. Marathon Oil.

Representative SCHEUER. Pardon?

Mr. ALBERTINE. Marathon Oil.

Representative SCHEUER. Marathon Oil, as I mentioned before. That was their decision. The pity of it is that those executives are still knocking off their half million or three-quarters of a million dollars annual salaries. It's the workers who are losing jobs, the workers in the steel mills and in the subcontractors by the thousands who have lost their jobs. There doesn't seem to be much rough justice there at all.

Mr. ALBERTINE. We have no members in the steel industry, and I certainly have no brief for anybody in the Fortune 100, particularly the management of the steel companies. But I think if you look at that study, you will, I think, have to conclude if you look at the numbers that, in fact, what the steel industry did with respect, for example, to diversification, was probably, given the relative cost of capital, relatively rational. That is to say, given the high cost of generating new capital resources. Given the terrible performance of the stock market in the 1970's, it probably was rational to go out and try to buy somebody else's assets rather than developing your own businesses.

So I think the cost of capital is a very, very important factor with respect to that issue.

We also, by the way, have concluded from those numbers that the so-called high-tech sector in this country is in about the same position relative to the Japanese that the capital-intensive sector was in 1965. Our numbers show that given the relative cost of capital in the United States versus Japan, a 10-year project—the same project in Japan as in the United States—requires a probability of success about five times higher in the United States than in Japan for it to be rationally undertaken here.

Our conclusion from that is that the same thing is going to happen to us in the high-tech sector as happened in the capital-intensive sector.

Representative SCHEUER. Also, it's the timeframe in which they measure success. Here you measure success not only on an annual basis, but on a quarterly basis—plant managers and chief executive officers have to figure out how they're going to do the next quarter.

I went to Japan the summer before last with Senator Roth and other members of this committee, Senator Hawkins of Florida, as guests of the Japan Productivity Institute. And we met with the president of the Yamasaki Machine Tool Works. He told us that when they decided to get into the business of producing robots, robotics, they did sit down with MITI and they did sit down with their treasurer and they did sit down with their bankers and their bankers gave them a 15-year financing plan. They lost money the first year, the second year, and the third year. They lost money for the first 8 or 9 years, and nobody gave a tinker's dam. Nobody hassled them. Nobody worried. The bankers kept patting them on the back and said, you're doing fine. It's a great product. Don't worry. We're behind you. MITI patted them on the back.

Around the 10th year they sort of saw some blue skies. By the 11th and 12th years, they were doing fine, and by the 15th year, they were making out like gangbusters all over the world.

So, it's a question of what your timeframe is for making money.

Mr. ALBERTINE. May I just respond quickly because it relates to the study. The relative cost of capital, Congressman Scheuer, that's the problem—one of the problems.

Representative SCHEUER. It makes it a lot easier to take that kind of a 15-year timeframe——

Mr. ALBERTINE. Absolutely.

Representative SCHEUER. To pay 4 percent annually instead of paying 12½ percent.

Mr. ALBERTINE. If you look at the numbers I just indicated, a 3-year project, the probabilities are not 5 to 1. They're about 1.8 to 1 or some such. One conclusion in the study is that the relative cost of capital requires management to collapse its time horizon in the United States.

Representative SCHEUER. Requires what?

Mr. ALBERTINE. Requires management to collapse the time it seeks to take for new projects. That is, 10-year projects are discouraged; 3-year projects tend to be discouraged less.

Representative SCHEUER. Yes.

Mr. ROBERTS. I think you could also consider the effect on people's timeframe of the relative certainty or uncertainty of Government policy. In the United States, one thing we can say is that the policy of the Government is always highly uncertain. No one knows what the Federal Reserve Board is going to do from one quarter to the next. And even in something like tax policy, if you consider what happened in 1981 and what happened in 1982, people can't possibly have any vision of what policy is, even for a short period of time.

Representative SCHEUER. Excuse me. If the witness will yield very briefly, you picked out the one element of Government that is fairly predictable from one quarter to the next—the Federal Reserve Board. You may not like Mr. Volcker's cigars and there may be other things about him that you don't like, but the one thing that you can say about him is that he's pretty doggone predictable.

I think that's one reason that he was reappointed. The business community felt that he was a Rock of Gibraltar and that his policies were predictable, come hell or high water. The people who criticized him felt that he wasn't flexible enough and didn't loosen up the money supply when times got a little tough.

Mr. ROBERTS. I think the record shows that Mr. Volcker goes from one extreme to the other. In 1981 and the first part of 1982, money was extraordinarily tight. In fact, in 1981 there was no money growth at all for 6 months, which is extraordinary. And then he goes to a wide-open policy.

So that's what I mean when I say that monetary policy is unpredictable. The extremes and the rates at which money rises and falls are destabilizing.

May I also respond to your question?

Representative SCHEUER. Please do.

Mr. ROBERTS. You were asking us about whether or not we were misallocating our capital.

Representative SCHEUER. Or are we simply, through poorly conceived tax policies and other policies, not setting the right kind of environment to produce the level of savings we need, which, channeled into investment, would give us the capital that business and industry need.

Mr. ROBERTS. Well, let's take your example of the steel industry. I think a case can be made that in many respects the steel industry was decapitalized by the tax system. It had to operate during a period in which inflation rose consistently over many years and the depreciation system which they were faced with in the tax law didn't let them come anywhere close to recapturing the replacement costs of their capital; that is, of the assets used up in production.

So, in that sense, you can see, obviously, the decline of the steel industry was in some way related to bad tax law.

I think we should also, when we look and worry about the movement of jobs abroad, particularly manufacturing jobs, consider the effect that taxes have on the cost of U.S. labor. We have a situation in which, as a result of past inflation and a tax schedule that was designed many, many years ago, the work force is higher up in the marginal tax brackets. They are no longer concentrated at the bottom end; they are now in the middle and even toward the upper end.

Any time you go to give a man a raise, he's faced with a 40-percent marginal tax rate. Then to give him any additional after-tax purchasing power, you've got to give him a much greater wage. If you add in the effects of the rising social security tax, which is another tax on employment, you have a situation where the tax system prices American labor out of the market, because if you want to reward good workers or to give them a cost-of-living adjustment, you have to give them such a large increase to leave them anything after tax.

I think that this has been a large factor in the decline of the competitiveness of American labor.

As Mr. Albertine pointed out, when we think about the rate of return on capital, we have to always remember it is an after-tax rate of return. And most likely, the rate of return is much more seriously affected by the tax rate on the additional dollar of earnings than by the interest rate. Consider somebody in the 50-percent bracket. Any undertaking that he would do which, say, would require him to make a 10-percent rate of return, would have to produce a 20-percent rate of return before tax.

So you have a whole range of rates of return from 10 to 20 percent which are simply crowded out by the tax system. And that kind of crowding out has been completely ignored in American economic policy, and it is probably much more serious than the kinds of crowding out from interest rates.

Just one last thing. We hear so much about the Japanese. But if they're doing so good, why is it we were reading in the newspapers not long ago they were trying to steal somebody's secrets. Who was it, IBM?

Maybe they're good at that. Who knows? [Laughter.]

Representative LUNGREN. Mr. Oswald.

Mr. OSWALD. I think that the terms of your question, Mr. Scheuer, that the data indicate that we had higher investment in the late seventies, when, theoretically, all the tax codes were against the situation. We changed the tax codes that dropped the top rates from 70 to 50 percent. It's been in effect for over 2 years. We dropped substantially the corporate tax rates and the corporate tax situation. Instead of investment going up, it's gone down in 1982 and in 1983. But the investments change. It's much more related to the level of economic activity and everybody says our recovery now is coming, not from investment, but from consumption, and the increased consumption.

So that what we do need is not additional tax changes to encourage investment, but to have a growing economy that encourages investment.

But I think there are serious problems of allocation. You indicated some of them in terms of corporate mergers and other things. But we have also encouraged, in a sense, a whole new level of speculation in terms of so-called capital flows. We have established new gimmicks of future markets that speculate on the average of the Dow Jones. That's not investment in any capital goods or anything that is needed.

I think what we do need to do is focus on allocation rather than new tax gimmicks that somehow shift the tax burden onto workers and away from corporations.

Representative LUNGREN. Mr. Oswald, you have indicated that there are some problems we have in terms of decisions we've made on taxes and that they, in your judgment, have an adverse effect in the misallocation of resources.

And from that you argue that we need an industrial policy. Could you not also argue, however, that what that means is that instead of looking at a new national industrial policy and taking tremendous amounts of this decisionmaking out of the marketplace, a reevaluation, from your perspective, is required of those decisions that have been made on taxing policy or on regulation or on worker training program?

In other words, should we not be looking at the fundamentals, the ones that we've always looked at, but perhaps, in your judgment, we haven't looked at or acted on in the proper way, instead of coming up with a new, overarching national industrial policy?

Mr. OSWALD. I would respond that what we are talking about is something that does precisely that. It does look at those policies in a way to reevaluate what is its impact, whether it's a training policy, tax policy, or whatever, on both the macro level of the economy and those micro sectors of the economy which are of particular concern to the country.

Representative **Lungren**. Isn't the Congress supposed to be doing that, anyway? How would this mechanism be more isolated from political pressure than the Congress is at the present time?

Mr. **Oswald**. I think it would give better insight to the Congress in terms of the decisions that Congress makes. It doesn't abrogate Congress' responsibility, but I think it provides better insights in terms of the application of macro policies in particular sectors.

I think one of the problems has been the difficulty of Congress to view the "micro effects of macro policies" that are being urged on it.

Representative **Lungren**. Let me just give you an example. One of the tax increases we had on gasoline, we were supposed to create more jobs and so forth in the private sector, and the jobs bill. And at least the first analysis that has been done shows that more money has gone into those States with lesser unemployment than those States with greater unemployment because the formula was created basically by the people who happen to be chairmen of the committees and subcommittees and, not so coincidentally, the chairmen's States and districts got disproportionately more funding.

I don't know. I don't seem to have the confidence that you seem to have with setting up this sort of mechanism to insulate itself from political pressures and make good economic decisions. I mean, you make the assumption that somehow, a board made up of people from the private sector, but also ultimately given the power of Government, would be able to make economic decisions.

First of all, could they pick winners and losers? And second, having picked those and decided that they want to allocate funds in one way or the other, either to support a transition from a losing industry and get its workers over the hump or transfer allocation of funds to a merging industry to try and make that transition faster, how do you think that this would actually be done? Human nature being as it is and political pressures being as it is and you being an astute observer of what happens here on the Hill?

Mr. **Oswald**. Political decisions get involved in one sense or another in the broad terminology in any process, whether that's the venture banker who lends money to his college classmate because he's the college classmate above somebody that he doesn't know at all who comes in off the street. That's also a political decision.

Representative **Scheuer**. Or to a third world country that he knows perfectly well can never repay that debt.

Mr. **Oswald**. But the policies are involved in one sense in every decision. It's our belief that what we're advocating establishes a more open system in terms of allowing all the participants to have more adequate access to the decisionmaking process in terms of the needs of the country rather than leaving very much of it in terms of the current political system.

Nobody is removing all politics because politics, in a sense, does affect every part of that decision.

Representative **Lungren**. But if we had a "Reconstruction Finance Corp.," in the 1940's, would it have chosen that the emerging industry, the high tech industry, would be made from grains of sand?

Would it not have tried to more rationally, at that point in time, make sure that the allocation of resources went into our heavy industry, steel, and autos and, as MITI did in Japan, say, stay away from that. That doesn't make a whole lot of sense.

Mr. OSWALD. I don't think that we're talking about all allocation of all resources.

Representative LUNGREN. We're talking about a major allocation, though, are we not?

Mr. OSWALD. A major marginal allocation is the way I would phrase it, those sectors——

Representative SCHEUER. A major mini-allocation. [Laughter.]

Mr. OSWALD. In terms of the total investment in goods and services, we're not talking about taking over all the investment of those items. We are not talking about superseding the private sector totally. We're talking about a marginal element of those industrial areas which are not served by private industry as it is currently set up and saying, let's review those and see if we can improve some of the allocative processes for those sectors that we believe it is, in our considered judgment, worthwhile putting additional resources in.

And I think that that is not a bad element of Government cooperating with the private sector to help things on both ends of the margin, both the very new, who may not have the old-boy network in order to get funded, or the very old, who may need particular help.

Clearly, the sort of help that was provided in the Lockheed and the Chrysler situation has paid off for both. I think that it's of benefit to have a process for making those decisions rather than just throwing them on the Congress.

Representative LUNGREN. How do we know that those employees would not have found work elsewhere and the money that went to Lockheed and to Chrysler would not have gone into other industries, emerging industries, and created more jobs? I don't know how we can ever determine that.

Mr. OSWALD. On the other hand, if we believe in a competitive system, I think we're better off with three, four auto companies than with one.

Representative LUNGREN. Well, let me just give you an example. McDonnell-Douglas just happens to be in my district. It's one of the major manufacturers of commercial airframes. There seems to be an after-the-fact judgment that the United States cannot support the traffic, and the international marketplace cannot support more than two major airframe manufacturers. When we went and helped Lockheed, it put McDonnell-Douglas in a very tough situation that they still have not gotten out of. Now, Boeing is in a tough situation.

Lockheed has now gotten out of the major commercial airframe manufacturing business and instead of having two rather healthy manufacturers, Boeing and McDonnell Douglas, we have some that are still working very hard to emerge from that difficulty and some could suggest that because the business that went to Lockheed, that helped create the depth of the difficulties.

Mr. OSWALD. I think we're also reacting to foreign industrial policies.

Representative LUNGREN. Oh, I understand that.

Mr. OSWALD. Part of the problem is that Japan requires a certain proportion of aircraft that Japan will buy are now built in Japan. Spain has done the same sort of requirement. Germany did when it bought the F-15.

A number of countries, because of their own intention of developing an aerospace industry—now you may say that that is good or bad, but it's their industrial policy to develop an aerospace industry and if we don't have something in place, we're at the back end of getting kicked by whatever somebody else wants to target and we're affected.

Representative SCHEUER. Of course, Japan has used protectionism extensively to protect her tiny little emerging industries to help them become giants. And then when they were able to flex their muscles and compete ruthlessly around the world, well, you saw the success of protectionism in industry after fledgling industry.

You asked the question, isn't it better to have three or four automobile companies than have one? There's another question and maybe even a better question that the automobile industry might ponder. In terms of global competition, it may be that we need to have one firm or one consortium of American firms producing a car, a global car, for competition in global trade. And if we can't do that, we may find that we are frozen out of global trade and that the State of California, instead of buying 52 or 53 percent of its cars from abroad, will buy 75 or 80 percent of its cars from abroad.

I fear that we're going to have to put up with more cooperation and more giantism in the automobile industry if we're going to have a crack at competing effectively in a phenomenon that, I assure you, the drafters of the Sherman Antitrust Act in the 1890's never dreamed of. And that is the emergence of viciously competitive global markets. And it may be that Ford, Chrysler, and General Motors are going to have to cooperate not only on research, but on production, too, to produce a car that will make it in global competition with the Japanese and the West Germans.

Who knows?

Mr. OSWALD. I think that that is part of what an industrial policy could look at.

Representative SCHEUER. I totally agree. And that's why I'm throwing that question for your consideration as an addition question to the one that you just posed to us.

Mr. ROBERTS. You know, part of the decline of our automobile industry was the fact that the industrial policy hit it. Government starting designing cars and telling manufacturers how to make them. This didn't do industry a whole lot of good.

Representative SCHEUER. Maybe we did it too late.

Mr. ROBERTS. Particularly when——

Representative SCHEUER. Maybe we did it too late, my friend, Mr. Roberts, because the cars that the American consumers started purchasing in vast quantities are cars that had exactly those high mileage per gallon consumption.

Mr. ROBERTS. You had price controls on oil and they could buy 50 cents a gallon gasoline.

Representative SCHEUER. But since 1973, our industry knew that we were in for a long period of rising gas prices and they never sat down and figured out what that meant in terms of a changing market. But the Japanese were doing that and when the Japanese came along with cars that got 30 and 35 miles to a gallon, that had a devastating effect on our industry And, again, that's another example of perfectly appalling decisionmaking by the moguls of Detroit that found 300,000 American laborers out of jobs, but not many of those decisionmakers.

I'm still looking for the rough justice there.

Representative LUNGREN. I would be happy to allow both of you to respond. I just might say, it seems to me, though, however, that having controls on pertroleum products had a great deal to do with it. You can demand of the American taxpayer that he buy a small car, but if you keep prices low, they are going to buy big ones. I just remember my first year at Notre Dame, I was able to see the demise of an auto manufacturer you may remember called Studebaker. They did a very good job of producing small cars that nobody bought.

Representative SCHEUER. I totally agree. Just one sentence. We ought to price energy for what it is—a very scarce, a very valuable, and a very precious product. And the sooner we start doing that across the board, the better off we'll all be.

Representative LUNGREN. I interrupted Mr. Albertine and Mr. Roberts a second ago when they wanted to respond and I think we'd better give them a chance.

Mr. ROBERTS. I'd just like to say something. We're all young men, so we don't know much about the past. But in 1950, there was a lot of investigation into the industrial policy of the time, which was the Reconstruction Finance Corp. I would like to read to you briefly from the report of the Senate Banking and Currency Committee with Senator Fulbright, because Mr. Oswald was complaining that the private market has its old-boy network and therefore, we have to have this industrial policy that lets somebody else allocate capital to avoid the biases of the old-boy network.

Well, the RFC had its own old-boy network. Senator Fulbright said:

> There's been a large number of instances in which the board of directors of the RFC has approved the making of loans over the adverse advice of the corporation's most experienced examiners and reviewing officials, notwithstanding the absence of compelling reasons for doing so and the presence of convincing reasons for not doing so.

So you can't ever be protected from having an old-boys network.

I have another very brief quote that I would like to read on the investment activities of the RFC, so that you can have some idea of its success. The RFC, and this is according to the report, thrust money on the proprietors of roadside snake farms, cultivators of cactus plants for sale in dime stores, dental clinics, paperboard makers, mattress makers, television manufacturers, canneries, movie houses, cafes, drug stores, truckers, a trailer manufacturer, a maker of fluorescent lamps, a rainbow trout factory, and some very devious fellows who wanted to be concessionaires for the roulette room in a Nevada hotel.

Representative LUNGREN. That was probably the best investment. [Laughter.]

Mr. ROBERTS. That was probably the best investment. [Laughter.]

Representative LUNGREN. Mr. Albertine.

Mr. ALBERTINE. Congressman, I'd just like to make one or two points with respect to the Japanese and what they do well and what they don't do well.

I think the Japanese do very well in terms of developing a consensus in their society that there has to be a significantly high savings rate. I think they have basically all elements in the society on board on that issue and I think we can learn an awful lot in that area.

I personally agree with Mr. Roberts that the targeting probably has hurt their economy, that if they were to do less targeting, their economic growth would even be better.

With respect to this old-boy network, I just have to comment on this because I think it's terribly misleading. The fact of the matter is there are old-boy and old-girl networks, a growing number of old and young women networks, all over the private sector. No doubt about it. No question about it. However, the very fact that the system tends to be relatively decentralized means that individuals with good ideas have much greater opportunities to get those funded than they would if we centralized the system because then we'd have one old-boy or old-woman network.

Just think if a kid who's 20 years old and dropped out of college and used to pick apples in some orchard in Oregon, came to the Federal Government and said. I have this wonderful idea to build a personal computer, what would have happened to that kid?

The fact is if you are smart enough in this venture-capital system to come up with a potentially lucrative idea, you are probably smart enough to find the sources of that capital. I just think that there's an enormous number of people who continually tell me that what they are looking for are kids with bright ideas that will build their fortunes.

Representative LUNGREN. I just wonder if one definition of an old-boy network in Georgia, or manifestation of it, is called Lancing alone. [Laughter.]

Mr. Oswald, if I could just ask you another question on this. Felix Rohatyn, who some call the father, the originator, of the regeneration, the resurrection of the Reconstruction Finance Corporation, has stated that, in his image of this corporation, that it should have the power to change officers of corporations that it invested in.

Would you support that power being given to that corporation?

Mr. OSWALD. I'm not sure that that is substantially different than what is currently done by some banks who require a certain set of changes of practices or have changes in boards of directors as conditions for certain elements.

I think that's an extreme sort of situation. But we have heard other comments this morning that parts of the problems of particular industries seem to have been the sort of management policies that have been taking place. If conditionality of the loan is made on the basis of the change of officers, I would think that the firm always has the choice of rejecting that loan, not making that application or accepting that as a conditionality. That's done currently and I don't see that as a major focus of this RFC, but it may be an element at some particular time.

Representative LUNGREN. Just one last question. That is, you mentioned before that the way you envisioned the RFC working and other elements of this industrial policy, as you envision it, would be basically working on the marginal allocation of resources. But wouldn't the marginal allocation impact be greater than the actual allocation that it would directly affect?

In other words, would not other resources flow to those corporations that had been knighted, so to speak, by the Government, with the idea that the Government wouldn't let something go under if it put its money into it and actually have a greater impact than just on the margin?

Mr. OSWALD. Yes; I think that we would have a greater impact in that it may remove part of that hesitancy of that extra 10 percent that the private sector currently would do even if you look at something like the Chrysler situation. Part of the money came from private banks. Part of it came from different changes that took place in terms of the work arrangements. There were a variety of factors that went into that sort of situation.

I would view anything that takes place here as more than just purely a question of throwing money out as a means of solving problems.

Representative SCHEUER. Let me just ask one more question on that Chrysler loan, your opinion of the request by Chrysler management to be relieved of one of the so-called onerous restrictions of that loan or requirements of that loan that if they made it, there would be certain payments forthcoming out of profits.

Mr. OSWALD. We think that those payments should come out of profits, that it should be repaid as they had agreed to.

Mr. ALBERTINE. It was a disgraceful request and ought to be turned down.

Mr. ROBERTS. May I point out that Lester Thurow, who testified about 10 days ago here before the Subcommittee on Economic Stabilization, who is an advocate of industrial policy, seems to have a different idea of the effect of industrial policy. His view is that the aim of industrial policy should be to hurry up and push those firms out that have failed.

In other words, his criticism of the market is that it gives firms that are having a bad time too long in which to die. And, therefore, the industrial policy would work by having closed Chrysler down, and, of course, Lockheed. That's his view.

Representative SCHEUER. And release those resources for more productive application.

Mr. ROBERTS. So, he's trying to say that you can speed up the effect of the market. My own view is that as long as American labor has the idea that it can improve itself by taxing capital, you can imagine the destructive effect of an industrial policy, where you have labor and business and government there and labor thinks that it can improve itself by taxing capital.

I think you would have something that would simply produce a total deadlock. You'd have some advocates of it saying, well, we've got to bail these people out and that's what industrial policy means. And you'd have Lester Thurow saying, no, you've got to close them down, that's what it means.

Mr. OSWALD. I'm not sure that those are inconsistent. In some industries, maybe the answer is to close down and in other industries it is to keep them alive. I'm not sure that those are inconsistencies.

Representative LUNGREN. But the question is who decides?

Mr. Oswald. Well, I think part of it is involving the people in the industry and the sharper-edged question may be in some cases looking at antitrust policy.

If a particular industry needs a major restructuring, part of the problem is that we don't have the mechanism for restructuring an industry to take care of major changes and maybe what we do is we allow——

Mr. Roberts. That's what the industry does to itself. You can't have an industrial management which consists of the industrial policy board managing all the firms and industries. That seems to be what the implication of this is.

Mr. Oswald. Every European country has restructured its steel industry through a coordinated policy, not by letting individual companies——

Representative Lungren. Well, let's see if we can get some agreement here. Would you all agree that we at least ought to take a look at the antitrust laws as they are on the books and antitrust policy with respect to the implications that has for domestic competitive industries in the international marketplace?

Mr. Albertine. Absolutely. I certainly would agree with that and I think certainly the area that Professor Samuelson talked about is a very fruitful one, which is the second level of R&D and joint research activities. The antitrust implications there ought to be resolved, in our judgment.

Mr. Roberts. I think probably much of our antitrust law probably came out of a frame of mind that business was bad and dirty and had to be carefully policed and tied up in knots or it would somehow take advantage of people. This was, of course, a very powerful frame of mind toward business. And if it has put us in some competitive disadvantage, then it should be looked at.

Representative Lungren. Mr. Oswald.

Mr. Oswald. I think that that needs to be looked at much more as it affects particular industries in cases rather than just one more macropolicy of let's make major changes in antitrust policy without looking at its implications.

Representative Lungren. Well. I want to thank all three of you and Mr. Samuelson, in his absence, for being our leadoff witnesses in our series of hearings on this subject. Obviously, we found out that you can't get all the answers or even come close to all the answers, in a short period of time. But I think it's been healthy to show that there is a tremendous divergence of opinion on what industrial policy is and what it ought to be.

We certainly appreciate your cooperation and your participation. Thank you.

The committee is recessed.

[Whereupon, at 12:05 p.m., the committee recessed, to reconvene at 10 a.m., Wednesday, June 29, 1983.]

# INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

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**WEDNESDAY, JUNE 29, 1983**

Congress of the United States,
Joint Economic Committee,
*Washington, D.C.*

The committee met, pursuant to recess, at 10:05 a.m., in room 2168, Rayburn House Office Building, Hon. Lee H. Hamilton (vice chairman of the committee) presiding.

Present: Representatives Hamilton, Scheuer, Holt, and Lungren.

Also present: James K. Galbraith, deputy director; Charles H. Bradford, assistant director; and William R. Buechner, Mary E. Eccles, and Mark R. Policinski, professional staff members.

## OPENING STATEMENT OF REPRESENTATIVE HAMILTON, VICE CHAIRMAN

Representative Hamilton. The committee will come to order.

This is the second in a series of six hearings being conducted by the Joint Economic Committee to look into what Congress can do to stimulate economic growth and make American industry more competitive in the world economy. During the past decade and a half, our economy has faced economic dislocations as severe as any since the Great Depression. We are now coming out of our worst postwar recession with little confidence that we know how to keep our economy growing.

Monetary and fiscal policies seem unable to sustain steady growth without generating periodic spates of high inflation and deep recession. And many of our industries that were the marvel of the world only a few years ago are now losing, and losing badly, to foreign competition.

The seriousness of our situation has led to suggestions that our growth policy should include an industrial policy geared to helping particular American industries compete in the world economy. This would represent a major change in the way the American Government conducts economic policy. Of course, whenever Congress enacts a major new law or the administration issues a significant regulation, the fortunes of American industries are affected. And certainly no one can argue with the suggestion that lawmakers should be better informed of the possible consequences of their actions for the competitiveness of U.S. businesses.

But whether we should go further and explicitly gear policies toward making particular industries more competitive is a question that should be thoroughly explored before we place too much hope for renewed economic growth on industrial policies. This concern has led the Republican and Democratic members of the Joint Economic Committee to conduct this series of bipartisan hearings on industrial policy. Our witnesses today have been asked to assess what contribution industrial policy could make within the framework of the broad set of policies needed to restore sound economic growth and industrial competitiveness.

We are pleased to welcome our distinguished colleague from Iowa, Congressman Berkley Bedell, who will be followed by a panel of distinguished economists: George Eads of the University of Maryland; Robert Eisner of the Northwestern University; Walt Rostow of the University of Texas.

Congressman Bedell is here. I see you're at the witness table. And we look forward to your comments and observations, Congressman Bedell. We're delighted to have you with us.

You may proceed.

## STATEMENT OF HON. BERKLEY BEDELL, A U.S. REPRESENTATIVE IN CONGRESS FROM THE SIXTH CONGRESSIONAL DISTRICT OF THE STATE OF IOWA

Representative Bedell. Thank you, Mr. Vice Chairman. I am pleased to appear before you this morning, and I want to commend you and the members of this committee for holding these hearings.

One reason I'm here is that I am chairman of the Small Business Committee on Oversight and the Economy. One of the tasks of this particular subcommittee is to look at the effects of automation. We have a very major study going forth in regard to the problems of unemployment in our society and whether or not the prominent projections of future employment are really something that we can consider reliable.

Rapid technological change and intense international competition have raised broad questions about the nature and the direction of our economy. A consensus is now developing that, whether we call it industrial policy or something else, we as a nation need a less wasteful and more efficient approach to policies affecting the structure, productivity, and adaptability of our economy.

I share with many of you a great respect for the wisdom and the dynamic diversity of the private sector. For this reason, I believe, we must work to bring labor, management, educators, and others together with the Government in a coordinated, cooperative effort to address our fundamental and truly common need to provide economic growth and fairness.

The immediate cause of the current broad interest in an industrial policy is the dismal economic performance we have experienced in recent years. We all know the litany: real GNP for the past 4 years has grown at only 0.6 percent, astronomical interest rates, double-digit inflation, the largest trade deficits in our history, $200 billion Federal budget deficits for as far as the eye can see, and over 10 percent unemployed.

As we all celebrate the current recovery, I want to urge you not to allow it to deflect your attention from the very serious, long-term economic problems. This morning I would like to emphasize one aspect—the most important aspect, to my mind—of that long-term economic problem: unemployment.

Real second quarter GNP is now estimated to be growing at a very healthy 6.6 percent. But the percentage of Americans who are employed has not improved. We have heard much about the decline in the official unemployment rate, from 10.8 percent in December to 10.1 percent now. This is entirely the result of counting fewer Americans as active in the labor force: that is, as working or looking for work. The ratio of employed to the total working age population, as shown by the BLS employed population ratio, the last item on the table attached to this statement, is unchanged from December.

Now I do expect the unemployment situation to show some short-term improvement over the next few months, but I am concerned that our current problems may not be entirely cyclical. Economic cycles have been with us for some time, of course, but below the cycles, a more fundamental, structural change has taken place.

Past technological innovation has changed us from an agricultural to an industrial, and then some years ago, to a service economy. In terms of employment, we were predominantly an agricultural nation until 1900, and the majority of all U.S. jobs have been in the service sector since 1948. Where will the innovations of the 1980's and beyond lead us? Since 1965, the American economy has provided 30 million new jobs, almost all of them in the service sectors, and in white collar employment.

This is seen as a sign of our adaptability by many economists and by some Government officials. But it is seen as a major reason for our competitive decline by most businessmen and women. Company after company, from Firestone to GE, are now cutting back on middle management. Employing companies are very conscientiously becoming leaner, more fluid, and with fewer levels of management.

Past precedent is no longer a reliable indicator of future developments. As an example, I have examined the respected Wharton model which projects the U.S. economy to 1991. I was astonished to find that their current model forecasts a 14.6-percent increase in overall government employment by 1991; that is, the Wharton model projects 2,300,000 new government jobs, a 15-percent increase in Federal Government employment, and a 14.5-percent increase in State and local employment.

Our course, our recent experience has been very different. In the past 2 years, Federal employment has not increased, but decreased by almost a full percentage point, reducing overall Federal employment by 27,000 workers.

More importantly, in terms of aggregate numbers, State and local employment over the past 2 years has declined a full 5 percent, reducing overall State and local employment by 685,000 workers.

The net decline in Federal and State and local employment is continuing, although at a slower pace in most areas of our country. I don't know whether overall government employment will continue to decline or not. But I doubt very seriously that government employment, as we currently define that category, will be anywhere near the levels the Wharton model projects for 1991.

Wharton is not alone in the use of highly questionable assumptions in their projections of the future. The Bureau of Labor Statistics, the authority in these matters, projects that the largest number of new jobs in the decade will be for secretaries. Typists, I might add, are also seen as a major growth occupation. Anyone familiar with the rate and extent of recent office automation would have to be perplexed by these projections.

Examples are legion. The occupation of draftsman is also projected by the BLS to create 9,000 to 13,000 new jobs each year. Engineers such as we had in our hearings last month, however, believe that technological advances in computer-aided design, CAD, is already drastically reducing, and will soon nearly eliminate, the need for draftsmen.

Now I'm not an engineer, but I believe there is reason to question such projections.

There are also very good reasons to question many of the current projections about the rate at which current jobs will be abolished by either automation or by international competition. A recent, much publicized study of the employment effects of robotics done at the respected Upjohn Institute is a good example. Their research projects only 100,000 to 200,000 jobs displaced by robots through the year 1990. And, of course, it will take workers to build the robots, so the net job loss is projected as only in the tens of thousands.

But I urge you to move beyond the headlines and examine the scope and assumptions of this and other research. What, exactly, did the Upjohn study examine and what were their assumptions, particularly regarding innovation and price? You will find that the robotics applications studied were extremely narrow and were associated almost exclusively with the automobile industry. Furthermore, and most importantly, the assumption was that technology, applications and price would remain relatively constant from 1982 through 1990.

The study's real forecasts are therefore not at all optimistic. They are that tens of thousands of jobs will be lost by 1990 to machines which weld, paint, load, unload, and assemble, even if there is no breakthrough in the technology, no new applications, and even if prices remain relatively constant for these machines.

I would ask you to consider in this context the enormous advances in recent years in the technology and applications of computers. Also, the cost per bit of dynamic RAM memory has declined from 2 cents in 1975 to 0.0079 cent in 1982. A conservative estimate of today's cost per dynamic RAM bit would be 0.004 cent or roughly one-five hundredths of the cost in 1975. These are U.S. figures, by the way. I am told that in Japan, the cost reduction has been even greater.

As the capabilities and applications for labor-saving technologies increase, and their prices decline, the incentives and competitive necessities for their use expands at an extremely rapid rate. There is much truth to the remark by the U.S. robotics industry that 10,000 robots in Japan's automobile industry has cost 300,000 U.S. jobs. There is no safe haven from the technological revolution or from international competition. We can retard or not facilitate innovation and international competition only at our long-term peril.

With wage rate differentials severely to our disadvantage in the United States, it is extremely important for our competitive economic position in the world, to retain our substantial lead not only in technological know-how, but in the application of that know-how, and in the superiority of our workers.

Our objective in developing a coordinated industrial policy must therefore be twofold: To assure the adequacy of jobs and income to provide for sufficient demand, and to encourage much more productive supply.

Without renewed and comprehensive attention to both of these aspects, as indicated in our current 72-percent utilization of capacity, and by our trade deficit, our future economic health will remain in doubt.

I guess the one message I want to bring forth, Mr. Vice Chairman, is that I would ask people to seriously question the assumptions behind the projections that are being brought to us by the so-called specialists. I believe when you really dig into where they're getting those assumptions you will find that there's reason to question the future situation that we have particularly in regard to unemployment in our society.

[The table attached to Representative Bedell's statement follows:]

[Seasonally adjusted]

| | Dec. 1982 | May 1983 |
|---|---|---|
| Civilian labor force, total (thousands) | 111,129 | 110,749 |
| Participation rate (percent) | 64.2 | 63.7 |
| Employed, total (thousands) | 99,093 | 99,557 |
| Unemployed, total (thousands) | 12,036 | 11,192 |
| Employed population ratio | 57.2 | 57.2 |

Source: BLS.

Representative Hamilton. Thank you very much, Congressman Bedell. Members of Congress are often accused of never having met a payroll. We know that, in your case, you have met a payroll and did it most successfully in your business. And you've succeeded in this institution, so we pay a lot of attention to your remarks about employment and unemployment.

I like your focus on jobs. When we talk about industrial policy, sometimes in all the maze of terminology and statistics we forget that job creation is the most important goal for the people of this country. The focus that you have given us today is very helpful. We appreciate that very much. We thank you for your testimony and, as you know, the bells have rung. Congresswoman Holt.

Representative Holt. I have no statement. Thank you very much, Congressman Bedell. I have great respect for your views on this subject.

Representative Bedell. Thank you.

Representative Hamilton. Thank you very much. The committee will stand in recess while we answer the rollcall. I'll ask our other witnesses to come forward and we'll begin with their statements as soon as we've returned.

[A short recess was taken.]

Representative HAMILTON. The committee will resume its sitting and we'll hear now from our three witnesses. I don't think there's any special order. I'll just go from right to left, if that's all right. Mr. Eads, we'll begin with you. Your statements, of course, will be entered into the record in full. You may begin, sir.

## STATEMENT OF GEORGE C. EADS, PROFESSOR, SCHOOL OF PUBLIC AFFAIRS, UNIVERSITY OF MARYLAND, COLLEGE PARK, MD.

Mr. EADS. Thank you, Mr. Vice Chairman. It gives me great pleasure to appear before you today to discuss the role that industrial policy might be able to play in helping to restore the Nation's productivity growth and international competitiveness.

In Senator Jepsen's letter of invitation, he asked whether monetary and fiscal policies alone can be relied upon to create the conditions for sustained, long run, economic growth? The answer to that question is clearly no. These policies need to be and, indeed, already are, supplemented by numerous other economic policies, many of which, either inadvertently or deliberately, impact differentially on firms, industries, and regions. These policy tools have an important role to play.

But that isn't really what the debate about industrial policy is over. Instead, it concerns the relative right that microeconomic policies and macroeconomic policies ought to be given in our Nation's economic strategy.

The proponents of industrial policy—or at least some of them—seem to feel that microeconomic policies should largely supersede macroeconomic policies as the primary instruments of economic strategy. They consider that our current difficulties reflect the inherent inability of macroeconomic policies to carry the primary load.

Those of us who are skeptical of this view do not deny the importance of properly designed and properly executed microeconomic policies as an element of the Nation's strategy, but we consider them as, at best, supplements to rather than as substitutes for well-designed monetary and fiscal policies. Moreover, we are concerned that in the enthusiasm over industrial policies, some of the important adverse side effects of relying too heavily on targeted microeconomic policies will be ignored.

I am primarily a microeconomist. My research examines the impact on business conduct and behavior of specific governmental policy actions. I have long been concerned that many of the Government's microeconomic interventions are poorly understood and produce important, unintended, adverse consequences. I am a strong believer in the Government's obtaining a better understanding of the consequences of its policies. For this reason I was entirely comfortable with the recommendations made by the National Commission on Supplies and Shortages in its final report to the President and the Congress in December 1976. This bipartisan Commission, which I served as Executive Director, examined a number of the issues that later would figure importantly in the industrial policy debate—the health of some of America's basic industries, the responsibility of the Government both for these industry's troubles and for their solution, the ability of the Government to understand the consequences of its numerous microeconomic policies, and so forth.

We recommended that the Government create, probably within the Department of Commerce, an improved industrial analysis capability and that it also have, somewhere within the Executive Office of the President, a small group of sectoral specialists whose job would be to help coordinate microeconomic interventions affecting their assigned sectors and also to point out the sectoral impacts of microeconomic policies.

Improved knowledge with the aim of preventing mistakes is one thing. Explicit targeting in order to bend microeconomic policies to promote specific industrial ends is quite another. As you may have guessed, I am considered an opponent of some of the more grandiose proposals for industrial policy. To me, they are born more out of frustration with our Nation's seeming inability to make and implement hard economic choices than out of any careful examination of whether such policies would produce the miraculous results that some of their more enthusiastic proponents claim.

I am very much afraid that our current infatuation with industrial policy is much like the fad for supplyside economics that we went through just a couple of years ago. Like supplyside economics, industrial policy is based upon an important core of truth. Those designing and implementing our microeconomic policies need to be aware of this core of truth. But the truth of industrial policy, just as the truth of supplyside economics, is being lost sight of as people rush to jump on the bandwagon of a policy that, in its more extreme version, seems to promise something for nothing.

It is my hope, Mr. Vice Chairman, that these hearings will, in part, serve as a useful antidote to the industrial policy fever that seems to be infecting many politicians, labor leaders, and, most surprisingly, businessmen. But, to repeat, the aim in administering such an antidote should not be to deny the importance of the role that appropriately designed and properly executed microeconomic policies can play in a nation's overall economic strategy, but to put that role into its proper perspective.

Elsewhere, I have written about many of the problems I see from placing too much of a burden on targeted microeconomic policies to achieve our desired goals. These problems include such things as assuming that our Government and our society operates or, indeed, can operate, in ways that seem to me to be fundamentally inconsistent with both our political traditions and our current social realities.

I find it amazing, for example, that many who are drawn to industrial policy, especially liberal Democrats, seem to be comfortable with its essentially antidemocratic—small "d"—character. Equally amazing are the political role models that some supporters of industrial policy advocate. They can rail against the consequences of Federal Reserve Board independence and in the same breath suggest that the Fed is precisely the nonpolitical political institution that any revitalized Reconstruction Finance Corporation should seek to emulate. Of course, in translating their broad visions into statutory language, they create institutions that bear no relationship to anything that could be considered either tough-minded or nonpolitical.

I also think that the foreign experience with industrial policy has been vastly overrated. It's a good thing for the advocates of industrial policy that Japan exists, for without this case, they would have absolutely nothing good to point to. But even in the case of Japan, it seems to me to be a major misreading of history to assert, as some seem to, that what passes for industrial policy in that country can be given more than a minor fraction of the credit for the economic success that has been observed.

Indeed, in my view, Japan proves the point that the most important thing for a country to do is to get its macroeconomic policies right and make sure that its explicit or implicit microeconomic policies do not get in the way unnecessarily.

But these and many other arguments for not expecting too much from any industrial policy are well known and I will not repeat their details. I would, of course, be happy to answer questions you might have concerning them during the question-and-answer session. What I'd like to concentrate on for the rest of my allotted time is a new concern that has emerged as I have contemplated the likely consequences of a major U.S. effort to turn toward targeted microeconomic policies as a major, if not the major, element in our economic strategy.

This concern relates to the adverse impact that an industrial policy might have on U.S. productivity by reinforcing certain of the trends that got us into trouble in the first place. I will skip laying out the evidence upon which I will base these assertions, which roughly occupy the next 10 pages of my prepared statement, and I will go directly to the conclusions.

As I was recently reading Bob Reich's book, "The Next American Frontier," I was intrigued with his criticism of "paper entrepreneurship," the tendency on the part of managers to be more interested in short-term paper profits obtainable through financial manipulation and conglomerate mergers than in the sort of fundamental revitalization of industry that will be required to restore our Nation's international competitiveness. Reich's advocacy of industrial policy can be traced directly to his belief that, absent Government efforts to redirect the incentives of American business, the swing to "paper entrepreneurship," and with it our long-term economic decline, will continue.

Reich's theme—that American managers have lost the ability, or the will, to manage—has, interestingly enough, been echoed on the other side of the Charles River, in work emanating from the Harvard Business School, principally that associated with Bill Abernathy. Abernathy's article, "Managing Our Way to Economic Decline," has been, I am told, the article that has generated the greatest request for reprints ever published by the Harvard Business Review. It makes many of the same points Reich does concerning the adverse impact of American business' excessive infatuation with paper entrepreneurship. But Abernathy's prescription is different from Reich's. In a recent book titled "Industrial Renaissance," Abernathy and his coauthors have called for business to "return to basics," to pay much more concern to skills like organization, administration, and production systems than to such things as financial manipulation and conglomeration.

What both of these critiques miss, and Reich's miss is the most troubling since it indicates that he really doesn't understand what has produced the phenomenon that concerns him so much, is the fact that American business behaves as it does because of the incentives that have been created for it. Business is an adaptive institution. It adjusts its focus to enable it to deal with whatever set of problems is most pressing. Change the set of problems and you inevitably will change the focus.

If excessive concern with the collection of issues that Reich lumps together as paper entrepreneurship does indeed have the consequences that both Reich and Abernathy attribute to it, and I believe that it does, then understanding why business has moved in this direction is critical before we recommend policies designed to reverse the trend. I don't believe that the cause was either improper training at the Harvard Business School and similar institutions, which is Abernathy's hypothesis, or that businessmen woke up one morning in the early seventies and decided that it was a good day to stop managing and become paper entrepreneurs, which is Reich's implicit hypothesis.

Instead, the change was rooted in the system of incentives that the Government created for business through its policies in areas such as tax and regulation.

When a businessman faces a world in which the rate of return he can earn on an asset is based primarily upon the nature of that asset's tax treatment or upon its regulatory status, it is only natural for him to concentrate his attention on these variables. Individuals skilled in dealing with these issues rise within America's corporations. They gradually displace individuals who were skilled in dealing with the older problems. With issues such as tax and regulation increasingly dominating the attention of business, it is not surprising that legal and financial types would have increasingly come to dominate top management.

What industrial policy would do—almost any type of industrial policy, but especially a highly targeted industrial policy of the sort proposed by some—would be to institutionalize and strengthen the very tendencies in business that both Reich and Abernathy decry. Even more than is true today, in our patchwork of overlapping and inconsistent microeconomic policies, success in business would come to depend upon a businessman's skill in "gaming against the Government." How, in such a situation, could we ever expect to see the return to management basics necessary to produce the industrial renaissance that Abernathy and his colleagues call for.

American business didn't abandon the basics of management because it lost interest in them, but because the game changed, and business moved to adapt. Mere exhortation—or even raising the specter of Japanese competition—won't cause the game to change back. This means reducing rather than increasing the amount of explicit targeting we do—whether in designing our tax policies or our social regulations.

As I said at the beginning of my statement, I have absolutely no problem with the Government having the capability to understand better the consequences of its microeconomic interventions. I believe that, in many cases, this understanding will prevent serious mistakes from being made. But to utilize this improved knowledge in order to engage in a much more active program of industrial targeting would be to compound the problem we now find ourselves in.

Mr. Vice Chairman, macroeconomic policies cannot do it alone. They need to be supplemented by intelligently designed and properly administered microeconomic policies. Furthermore, the microeconomic consequences of our macroeconomic policies need to be better understood, lest we create unintended adverse side effects. But don't let the allure of industrial policy blind you either to the serious problems it would create. Also, don't let it blind you to the more urgent need to focus your attention primarily upon the basic macroeconomic tools.

Get these right, and you are 90 percent or more of the way home. Thank you.

[The prepared statement of Mr. Eads follows:]

## PREPARED STATEMENT OF GEORGE C. EADS

Mr. Chairman, members of the committee. It gives me great pleasure to appear before you today to discuss the role that industrial policy might be able to play in helping to restore the nation's productivity growth and international competitiveness.

In Senator Jepsen's letter of invitation, he asked whether monetary and fiscal policies alone can be relied upon to create the conditions for sustained long-run economic growth. The answer to that question is clearly "no." These policies need to be--and, indeed, already are--supplemented by numerous other economic policies, many of which either inadvertently or deliberately impact differentially on firms, industries, and regions. These policy tools have an important role to play.

But that isn't really what the debate about what has come to be called "industrial policy" is over. Instead, it concerns the relative weight that microeconomic policies and macroeconomic policies ought to given in our nation's economic strategy.

The proponents of industrial policy--or at least some of them--seem to feel that microeconomic policies should largely supercede macroeconomic policies as the primary instruments of economic policy. They consider that our current difficulties reflect the inherent inability of macroeconomic policies to carry the primary load.

Those of us who are skeptical of this view do not deny the importance of properly-designed and properly executed microeconomic policies as an element of the nation's economic strategy, but we consider them as, at best, supplements to rather than as substitutes for well-designed monetary and fiscal policies. Moreover, we are concerned that, in the enthusiasm over industrial policies, some of the important adverse side-effects of relying too heavily on targeted microeconomic policies will be ignored.

I am primarily a microeconomist. My research examines the impact on business conduct and behavior of specific governmental policy actions. I have long been concerned that many of the government's microeconomic interventions are poorly understood and produce important unintended adverse consequences. I am a strong believer in the government's obtaining a better understanding of the consequences of its policies. For this reason I was entirely comfortable with the recommendations made by the National Commission on Supplies and Shortages in its final report to the President and the Congress in December 1976. This bipartisan Commission, which I served as Executive Director, examined a number of the issues that later would figure importantly in the industrial policy debate--the health of some of America's basic industries, the responsibility of the government both for these industry's troubles and for their solution, the ability of the government to understand the consequences of its numerous microecnomic policies, and so forth. We recommended that the government create, probably within the Department of Commerce, an improved industrial analysis capability and that it also have, somewhere within the Executive Office of the President, a small group of sectoral specialists whose job would be to help coordinate microeconomic interventions affecting their assigned sectors and also to point out the sectoral impacts of macroeconomic policies.

Improved knowledge with the aim of preventing mistakes is one thing. Explicit targeting in order to bend microeconomic policies to promote specific industrial ends is quite another. As you already may have guessed, I am considered an opponent of some of the more grandiose proposals for industrial policy. To me, they are born more out of a frustration with our nation's seeming inability to make and implement hard economic choices than out of any careful examination of whether such policies would produce the miraculous results some of their more enthusiastic proponents claim.

I am very much afraid that our current infatuation with industrial policy is very much like the fad for "supply side" economics we went through just a couple of years ago. Like "supply side" economics, industrial policy is based upon an important core of truth. Those designing and implementing our macroeconomic policies need to be aware of this core of truth. But the truth of industrial policy, just as the truth of "supply side" economics, is being lost sight of as people rush to jump on the bandwagon of a policy that, in its more extreme version, seems to promise something for nothing.

It is my hope, Mr. Chairman, that these hearings will, in part, serve as a useful antidote to the "industrial policy" fever that seems to be infecting many politicians, labor leaders, and, most surprisingly, businessmen. But to repeat, the aim in administering such an antidote should _not_ be to deny the importance of the role that appropriately-designed and properly-executed microeconomic policies can play in a nation's overall economic strategy but to put that role into its proper perspective.

Why the current interest in "industrial policy"? In my opinion, it stems from many sources. The most fundimental is the recognition that our productivity performance, both absolutely and relative to our major trading partners, has been dismal for at least the last decade or so. The truth is beginning to dawn on people that unless this performance can be improved, our current standard of living cannot be maintained, let alone improved. The apparent success of the Japanese in using something that some refer to as industrial policy to spark their economy is appealing to those who would like to see us emulate Japan's superior productivity performance.

The second source of interest in industrial policy is the recognition of the massive growth of governmental intervention in the micro-decisions of the economy over the last 10 to 15 years and the leverage, both for good and for ill, that this creates. We might as well admit it. The debate over industrial policy is very much a continuation of the debate that has raged off an on in this country over at least the last fifty years about the feasibility and desirability of "government planning." Previously, the quickest way to end that debate was to describe the level of governmental intervention that would be required in a planned economy. (In a pinch, one could invoke the spectre of Gosplan.) But we now have an extremely high level of intervention, though we don't call it "planning". Or, to be more accurate, we have _unplanned_ intervention. We got it not because we as a nation ever made a conscious decision to have the government to assume the role of directing the details of business decisionmaking, but as an unplanned by-product of our efforts to achieve various important social goals--the cleaning up of the environment, the improvement of workplace health and safety, and yes, even the promotion of investment though various forms of direct and indirect incentives. In trying to achieve each of these ends, we have employed techniques that put the government in the position formerly held by the business decisionmaker.

The proponents of industrial policy can present their proposals--and this, I believe, explains much of the concept's appeal to the business community--as a way in which the level of governmental intervention might actually be reduced, or, if not reduced, then at least channeled toward ends that business feels somewhat more comfortable with. The most important of these are the enhancement of our international competitiveness and the modernization of our industrial base.

The third reason for the appeal of the concept of industrial policy is that it represents to some people the way in which the vast powers of the federal government can be used to shield them from the rigors of change. These people have seen the future and don't like what it seems to hold for them. They view industrial policy as a way of working out arrangements to stop or to slow down and "humanize" the pace of this change.

The fact that the second and third reasons I have mentioned are fundimentally inconsistent illustrates another important appeal of industrial policy--its ambiguity. At this stage of the debate, industrial policy is the ultimate "candy store." A politician, a businessman, or a labor leader can be for it--or against it, for that matter--and noone will know precisely what he or she is advocating. It can be faster change or slower change; more government or less government. The concept, or some version of it, is consistent with almost any interpretation.

Given these virtues, it is understandable why the idea would have a seemingly irresistable appeal, especially to those who are weary of having to fight over the hard choices that everywhere seem to embody monetary and fiscal policy. These hard choices are contentious and fractious. They seem to generate few winners and many losers. Industrial policy, in contrast, can be crafted, it seems, to generate only winners.

Elsewhere I have written about many of the problems I see from placing too much of a burden on "targeted" microeconomic policies to achieve our desired economic goals. These problems include such things as assuming that our government and our society operates--or, indeed, can operate--in ways that seem to me to be fundimentally inconsistent both with our political traditions and current social realities. I find it amazing that many who are drawn to industrial policy--especially liberal Democrats--seem to be comfortble with its anti-democratic (small d) character. Equally amazing are the political role-models that some supporters of industrial policy advocate. They can rail against the consequences of Federal Reserve Board independence, and in the next breath suggest that the Fed is precisely the "nonpolitical" political institution that any "revitalized

Reconstruction Finance Corporation" should seek to emulate. (Of course, in translating their broad visions into statutory language, they create institutions that bear no relationship to anything that could be considered "tough minded" or "nonpolitical.")

I also think that the foreign experience with industrial policy has been vastly overrated. It is a good thing for the advocates of industrial policy that Japan exists, for without this case, they would have absolutely nothing good to point to. But even in the case of Japan, it seems to me to be a major misreading of history to assert, as some seem to, that what passes for industrial policy in that country can be given more than a minor fraction of the credit for the economic success that has been observed. Indeed, in my view, Japan proves the point that the most important thing for a country to do is to get its macroeconomic policies right and make sure that its explicit or implicit microeconomic policies do not get in the way unnecessarily.

But these and many of the other arguments for not expecting too much from any industrial policy are well known and I will not repeat their details. I would, of course, be happy to answer any questions you might have concerning them during the question and answer session. What I'd like to concentrate on for the rest of my allotted time is a new concern that has emerged as I have contemplated the likely consequences of a major U.S. effort to turn toward "targeted" microeconomic policies as a major--if not the major--element in our economic strategy.

This relates to the adverse impact that an industrial policy might have on U.S. productivity by reinforcing certain of the trends which got us into trouble in the first place. To lay out my argument, I will have to digress briefly to consider the causes of our recent poductivity decline.

Economists who traditionally study such things have professed themselves baffled by this decline. Attempts to use conventional "growth accounting" techniques have left by far the majority of it "unexplained." Other efforts have narrowed this gap, but it remains large.

One of the more interesting controversies--one which I have followed especially closely given my research interests--has been the possible role that the rise in federal regulation has played. The timing seems right. Much of the upsurge in "social regulation" occurred just at the time that the rate of productivity growth began to fall off noticeably. However, researchers who have attempted to assign a weight to this factor have credited it with only a small fraction--ten to twenty percent at the ourside--of the "explained" proportion of the productivity decline.

I have long felt that these efforts, which use investment "diverted" to regulatory compliance as their measure of regulation's adverse productivity impact, are missing the boat. To me, regulation's adverse impact on productivity is not so much its actual measurable costs, but the change it produces in the way managers make decisions. Now its precisely the purpose of regulation to change managerial decisions. But not in the way I am thinking about.

The problem is not so much the fact that we have chosen to impose certain significant social costs on business--that is entirely appropriate in my view--but the manner which we have chosen to do it. Due to our "command and control" system of regulation, managers today optimize not so much against the actions of their competitors, but against the actions of the government (which, in many cases, can have a far more profound effect on their fortunes than anything mere private competitors can do.) This "gaming against the government" can have more profound effects on business behavior than the actual costs of regulatory compliance.

Since the level of regulation is a hard concept to measure, it may help to see what I am driving at if we switch our attention for a minute to another area of governmental policy--our tax code.

Over the last couple of decades we have created a tax code of byzantine complexity. When we have adjusted rates, we normally have not done so by changing the rate structure but by creating new classifications of tax preferences. From a managerial viewpoint, this is every bit as much "regulation" as is the requirement that firms install certain forms of pollution control devices or take actions to protect the safety and health of their workers. And also like "social regulation", it is very much "industrial policy," though not usually acknowledged as such.

The clearest illustrations are to be found in our corporate tax structure. Figure 1, taken from a paper by Charles Hulten and James Robertson of the Urban Institute,[1] shows the nominal and effective tax rates for total nonresidential business on new investment for the period 1952 to 1986 (the years after 1982 are based upon a forecast.) These are the tax rates that the average businessman, looking forward, would have expected to pay on an average investment that he might have been contemplating making.

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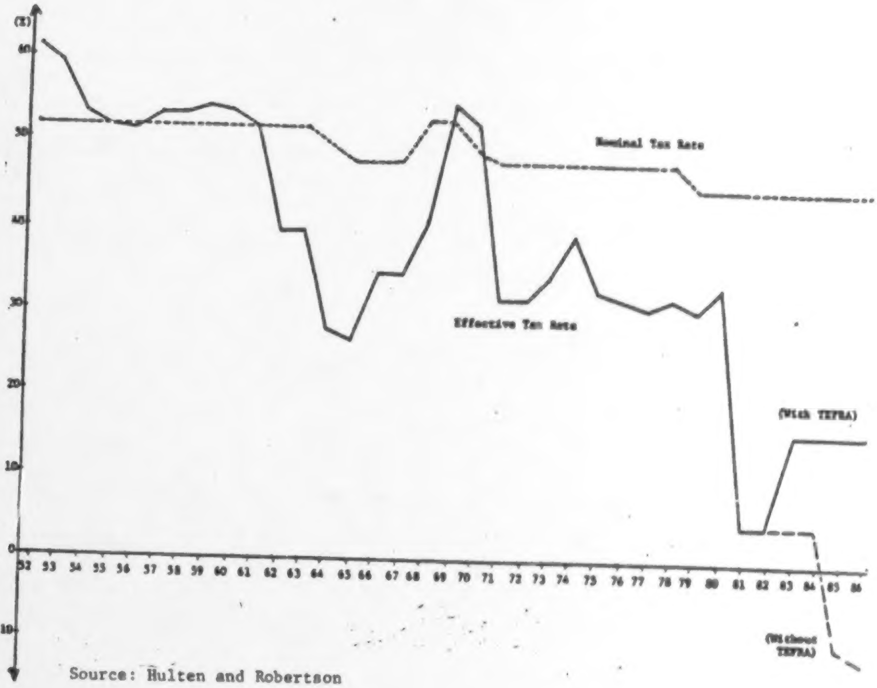
1. Charles R. Hulten and James W. Robertson, "Corporate Tax Policy and Economic Growth: An Analysis of the 1981 and 1982 Tax Acts," Draft, December 1982, p. 3

Figure 1

Nominal and Effective Tax Rates
Total Non-Residential Business



Source: Hulten and Robertson

What is especially striking about Figure 1 is the degree to which nominal and effective corporate tax rates, even on average, have diverged, especially since the early 1960s. (This trend was broken only by the sharp spike in the late 1960s). Had the 1982 Tax Act not been passed, we would have, in effect, gone beyond repealing the corporate income tax _without changing the nominal corporate tax rate._

As I said, the data shown in Figure 1 reflect the _average_ tax rate for all nonresidential business. This average figure conceals great variance across industrial sectors. Some idea of the magnitude of this variance can be seen in Table 1, taken from the 1982 Economic Report of the President. It shows the effective tax rates on new depreciable assets by major industry both before and after the 1981 Tax Act. It shows that while the 1981 Act did indeed, as Figure 1 shows, virtually eliminate the _average_ corporate tax liability, it did so in a highly uneven way, actually increasing the _variance_ across industries. I don't have weighted figures, but a comparison of unweighted averages makes the point well enough. Prior to the passage of the 1981 Act, the average unweighted effective corporate tax rate was 35.6 percent; the 1981 Act reduced this to 10.6 percent. However, the _range_ of industry averages (highest average rate to lowest average rate) increased from 27.4 percentage points (53.2 percent for services and trade to 25.8 for motor vehicles) to 48.4 percentage points (37.1 percent for services and trade to *minus* 11.3 percent for motor vehicles.)

Table 1--Effective Tax Rates on New Depreciable Assets
Selected Industries, 1982

| Industry | Old Law | New Law |
|---|---|---|
| Agriculture | 32.7 | 16.6 |
| Mining | 28.4 | -3.4 |
| Primary Metals | 34.0 | 7.5 |
| Machinery and Instruments | 38.2 | 18.6 |
| Motor Vehicles | 25.8 | -11.3 |
| Food | 44.4 | 20.8 |
| Pulp and Paper | 28.5 | 0.9 |
| Chemicals | 28.8 | 8.6 |
| Petroleum Refining | 35.0 | 1.1 |
| Transportation Services | 31.0 | -2.9 |
| Utilities | 43.2 | 30.6 |
| Communications | 39.8 | 14.1 |
| Services and Trade | 53.2 | 37.1 |
| Unweighted Average | 35.6 | 10.6 |
| Range | 25.8 to 53.2 | -11.3 to 37.1 |

Note: Assumes a 4 percent real after tax rate of return and 8 percent inflation.

Source: *Economic Report of the President*, February 1982, p. 124.

Even this comparison does not do justice to the degree of sectoral-specific incentives embodied in the corporate tax structure. Recent work by Mervyn King and Don Fullerton of Princeton suggests that the range of effective corporate tax rates on various sorts of assets runs from a minus 100 percent (that is, the tax law provides an effective subsidy roughly equal to the before-tax profits) to somewhat above a plus 100 percent (that is, taxes take somewhat more than the entire profits that an investment would earn.)[2] All this from a single nominal corporate tax rate of 46 percent.

I will leave it to experts in public finance to worry about the consequences for tax policy of these findings. What I am interested in what such a large spread of effective tax rates across various industries and across various forms of investment does to business decisionmaking.

The tax law is not the only place where "nominal" and "effective" levels of policy stringency vary--though it is perhaps the easiest place to see the concept at work. We can, with a little imagination, see the same problem in the area of environmental regulation. Figure 2 is from the report of a study directed several years ago by Eugene Goodson.[3] This figure shows the "nominal" (i.e., the statutory) level of permitted emissions of hydrocarbons, carbon monoxide, and nitrogen oxides (the three numbers on the right hand side of the figure) by year from light-duty vehicles (i.e., passenger cars and light trucks.) The "transactions" referred to are regulatory actions concerning the timing and/or stringency of these regulation. (The report lists 75 such "transactions" between December 1965 and May 1976.) In each of the "transactions," some important element of the standard was up for discussion and possible modification.

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[2] Marvyn A. King and Don Fullerton, "The Taxation of Income From Capital: A Comparative Study of the U.S., U.K., Sweden and West Germany--Comparison of Effective Tax Rates," National Bureau of Economic Research Working Paper No. 1073, February 1983, Figure 7.9.

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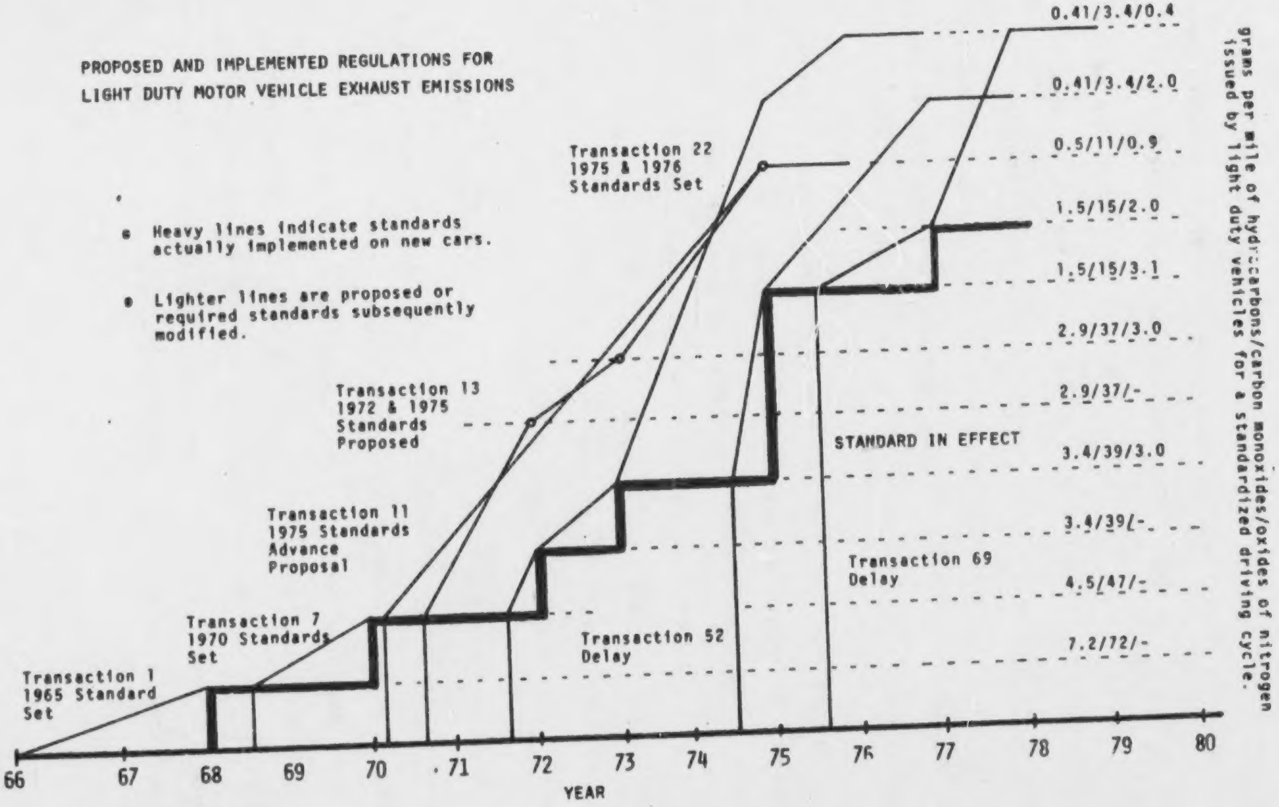
3. Federal Regulation of Motor Vehicles: A Summary and Analysis, Institute for Interdisciplinary Engineering Studies, Purdue University, for the U.S. Department of Transportation, March 1977, p. 48.

Figure 2



PROPOSED AND IMPLEMENTED REGULATIONS FOR LIGHT DUTY MOTOR VEHICLE EXHAUST EMISSIONS

- Heavy lines indicate standards actually implemented on new cars.
- Lighter lines are proposed or required standards subsequently modified.

Source: Goodson

As I said earlier, I have always felt that those who count regulation's "cost" as the resources devoted to compliance have been missing its most important impact on productivity. In my view, regulation's major cost is how it refocuses business decisionmaking--ironically, not on how to most inexpensively achieve society's goals in areas such as environmental protection, but on how to bend the rules and regulations in ways most favorable to one's company and most unfavorable to one's competitors.

This is equally true for the tax code's impact on the economy. Given the data shown above, who can argue that we ought to be indifferent between corporate tax that raises a given amount of money through keeping nominal rates virtualy unchanged for over thirty years and gradually introducing massive, industry-specific "wedges" and one in which the nominal and effective rates remain quite close?

(By the way, for those of you on the committee who are interested in international comparisons, recent research by a friend of mine, Professor Gary Saxenhouse of the University of Michigan, strongly suggests that one of Japan's most distinguishing characteristics, at least until quite recently, has been taxes on capital that been not so much different on average from ours, but which exhibited a great deal lower variance across industries. Don Fullerton's work, though it does not include Japan, also suggests that the variance in tax rates on capital, perhaps even more than the mean, seems to help explain cross-national differences in economic performance.)

What does all this have to do with industrial policy? A great deal, I believe.

As I was recently reading Bob Reich's new book The Next American Frontier, I was especially intrigued with this criticism of "paper entrepreneurship," the tendency on the part of managers to be more interested in short-term "paper" profits obtainable through financial manipulation and conglomerate mergers than in the sort of fundimental revitalization of industry that will be required to restore our international competitiveness. Reich's advocacy of industrial policy can be traced directly to his belief that absent government efforts to redirect the incentives of American business, the swing to "paper entrepreneurship," and with it our long-term economic decline, will continue.

Reich's theme--that American managers have lost the ability (or the will) to manage--has been echoed on the other side of the Charles River, in work emanating from the Harvard Business School, principally that associated with Bill Abernathy. Abernathy's article, "Managing Our Way To Economic Decline" has been, I am told, the article generating the heaviest request for reprints ever published by the Harvard Business Review. It makes many of the same points as Reich does concerning the adverse impact of American business's excessive infatuation with "paper entreprenurship." But Abernathy's precription is different from Reich's. In a recent book titled Industrial Renaissance, Abernathy and his co-authors have called for business to "return to basics"--to pay much more concern to skills like organization, administration, and production systems than to such things as financial manipulation and conglomeration.

What both of these critiques miss--and Reich's miss is the most troubling since it indicates that he doesn't understand what has produced the phenomenon that concerns him so much--is the fact that American business behaves as it does because of the incentives that have been created for it. Business is an adaptive institution. It adjusts its focus to enable it to deal with whatever set of problems is most pressing. Change the set of problems, and you inevitably will change the focus.

If excessive concern with the collection of issues that Reich lumps together as "paper entrepreneurship" does indeed have the consequences that both Reich and Abernathy attribute to it (and I believe that it does), then understanding why business has moved in this direction is critical before we recommend policies designed to reverse the trend. I don't believe that the cause was either improper training at the Harvard Business School and similar institutions (Abernathy's hypothesis) or that businessmen woke up one morning in the early 1970s and decided that it was a good day to stop managing and become "paper entrepreneurs" (Reich's implicit hypothesis.) Instead, the change was rooted in the system of incentives that the government created for business through its policies in areas such as tax and regulation.

When a businessman faces a world in which the rate of return he can earn on an asset is based primarily upon the nature of that asset's tax treatment or upon its regulatory status, it is only natural for him to concentrate his attention on these variables. Individuals skilled in dealing with these issues rise within America's corporations. They gradually displace individuals who were skilled in dealing with the older problems. With issues such as tax and regulation increasingly dominating the attention of business, it is not surprising that legal and financial types would have increasingly come to dominate top management.

What industrial policy would do--almost any type of industrial policy, but especially a highly targeted industrial policy of the sort proposed by some--would be to institutionalize and strenthen the very tendencies in business that both Reich and Abernathy decry. Even more than is true today in our patchwork of overlapping and inconsistent microeconomic policies, success in business would come to depend upon a businessman's skill in "gaming against the government." How, in such a situation, could we ever expect to see the "return to management basics" necessary to produce the "industrial renaissance" that Abernathy and his colleagues call for.

American business didn't abandon the basics of management because it lost interest in them but because the game changed, and business moved to adapt. Mere exhortation--or even raising the spectre of Japanese competition--won't cause the game to change back. This means _reducing_ rather than increasing the amount of explicit targeting we do--whether in designing our tax policies or our social regulations.

As I said at the beginning of my statement, I have absolutely no problem with the government having the capability to understand better the consequences of its microeconomic interventions. I believe that, in many cases, this understanding will prevent serious mistakes from being made. But to utilize this improved knowledge in order to engage in a much more active program of "industrial targeting" would be to compound the problem we now find ourselves in.

Mr. Chairman, members of the committee. Macroeconomic policies cannot do it alone. They need to be supplemented by intelligently-designed and properly-administered microeconomic policies. Furthermore, the microeconomic consequences of our macroeconomic policies need better to be understood lest we create unintended adverse side-effects. But don't let the allure of industrial policy blind you either to the serious problems it would create. Also, don't let it blind you to the more urgent need to focus your attention primarily upon the basic macroeconomic tools. Get these right, and you are 90 perecent or more of the way home.

Representative HAMILTON. Thank you very much, Mr. Eads. I think we'll go ahead and have the statements from all of the witnesses before we turn to questions.

Mr. Rostow, we're delighted to have you back in Washington and it's good to see you. We look forward to your testimony.

## STATEMENT OF WALT W. ROSTOW, PROFESSOR OF ECONOMICS AND HISTORY, UNIVERSITY OF TEXAS, AUSTIN, TEX.

Mr. ROSTOW. Thank you, Mr. Vice Chairman. Because my approach to the issue of industrial policy is a bit unorthodox, if not eccentric, I have submitted as background to this testimony the programmatic chapter of a book of mine which will be published in October by the University of Texas Press. It's entitled "The Barbaric Counter-Revolution: Cause and Cure."

You'll be relieved to know, Mr. Chairman, that two-thirds of the book is devoted to cure. I request the vice chairman's permission that this chapter be printed in the record of these proceedings.

Representative HAMILTON. Without objection, that will be done.

[The chapter referred to follows:]

## Chapter 6

## What is to be Done?

When presented with a new idea President Kennedy would typically ask: "What do you want me to do about it today?" President Johnson would simply lean forward and say: "Therefore?" In that spirit, this chapter is an effort to render more concrete and operational the broad approach to national and international economic policy outlined in Chapter 5.

The package of commended policies that flow from Chapter 5 can be grouped under five headings as follows:

A. Installing a Long Term Policy for the Control of Inflation.
B. Nurturing the Fourth Industrial Revolution.
C. Rehabilitating the Older Basic Industries.
D. Coping with the Fifth Kondratieff Upswing.
E. Rebuilding the Nation's Infrastructure.

The central argument is quite simple. An effective long term policy for the control of inflation would bring real interest rates down to their natural low level, in the range of 1-3%, and keep them there. Low real interest rates would, in themselves, unleash a large increase in long-term investment as well as greatly expanded sales of houses, automobiles, and durable consumers goods. A strong business expansion would begin in the private sector. But the structure - the investment pattern - of the boom of the 1980's and 1990's should differ greatly from that of the 1950's and 1960's. To assure that certain structural problems of the national and international economy were dealt with, supplementary public policies would be required. They are of a character that would reinforce -- not usurp, intrude upon, or damp -- the actions of the private sector.

### A. Installing a Long Term Policy for the Control of Inflation.

The view taken in this book is that the long term control of inflation requires the combined use of fiscal, monetary, and incomes policies. In addition, as comments made thus far on energy, medical costs, and productivity suggest, it requires efforts to minimize the price rise in particular sectors, as well as actions over a wide front to reduce core inflation by generating a high, steady rate of productivity increase.

I shall begin with incomes policy because it is the most controversial component in the recommended long-term inflation control program. In fact, there is virtually a conspiracy of silence among American politicians of both parties on this point, although many are well aware of the option.

If one reviews the methods of various countries to bring about a gearing of wage to productivity increases, one finds a considerable range of procedures and institutional devices. The technical common characteristics are the enunciation (or negotiation) of an explicit or implicit wage norm in terms of national rather than industry-by-industry criteria; the provision of a forum in which business and labor exchange views and negotiate in terms of such national criteria; the provision of some wage flexibility as between rapidly growing high productivity industries and less dynamic sectors; supplementary fiscal, monetary, and other policies that are required to make the wage settlements realistic, equitable, and, thus, acceptable. Perhaps most important of all, wage contracts are set annually and, usually, at roughly the same period. Spring seems to be a preferred season.

Take, for example, Japan's wage-setting system. It is based on four elements, none of which is inscrutably oriental. Indeed, it was adapted in the mid-1950's from prior Western efforts in this field.

1. Every spring, business, major labor unions, and the government negotiate to establish a norm for wage increases. The norm is based on all the key factors affecting the national economy: the expected rate of increase in productivity, the balance-of-payments position, unemployment, etc. The norm does not hold for all wage increases: flexibility is allowed for more-or-less dynamic industries and firms within them, as in any system of wage guideposts. About a quarter of the labor force is directly affected by the spring negotiation; but it has a much wider influence on wage setting throughout the economy.

2. During the year, regular meetings are held by business and labor and government officials to review the economy's position and problems. These are not negotiating sessions; but when spring negotiations arrive, there is a common, realistic view of the scope for non-inflationary wage increases. Spring bargaining is over a narrow range.

3. A part of workers' income takes the form of a semi-annual bonus primarily geared to each firm's profits.

4. Against the background of wage payments linked to the average rate of increase in productivity, fiscal and monetary policy are freed to do jobs they can do: they help the economy avoid overheating, and they stimulate the economy when unemployment rises.

Three special features of Japan's method should be noted: direct price controls are used selectively to damp the inflation rate and inflationary expectations, notably those set or influenced by public authorities; monetary policy is not conducted wholly in aggregate terms but targeted to achieve special policy objectives in particular sectors; the Japanese union structure is firm oriented rather than industry oriented.

In Germany and Austria, on the other hand, understandings about appropriate wage increases are arrived at among strong, highly centralized industrial and labor groups. In Germany, the annual contract with the metal-workers union is generally negotiated first and tends to set the national pattern which is firmed up by other negotiations in the spring. A council of five experts provides an analysis of the economy's prospects and, in affect, sets the framework for wage negotiations. Both Germany and Austria provide institutional arrangements for sustained labor-management discourse on the prospects for the economy as a whole independent of the wage negotiating process. The Austrian arrangements, as one would expect in a very small, homogeneous country, are even more centralized than the German.

Australia, out of a long history, developed state and federal conciliation and arbitration commissions which play a central role in wage determination, with the Federal Commission taking precedence in case of a conflict in rulings.

In all cases, the role of international influence on domestic prices has complicated the national task, a subject to which we shall return.

The institutional arrangements devised by each country evidently reflect their special circumstances, including the union structures which have evolved out of their several histories. But, in the end, as Austrian Finance Minister Hans Seidel told the Joint Economic Committee of the Congress on June 2, 1981, their success depended on an acceptance, so far as the reconciliation of growth and control over inflation are concerned, of a social partnership. "Social partnership," Seidel said, "does not just mean that we all sit in the same boat. It also means that we are willing to steer the boat in a direction upon which most of us agree." This requires, of course, a sense of equity in the outcome.

In the United States we accepted price and wage controls during the Second World War and the Korean War; and virtually every post-1945 administration has been driven, against its will, to make some kind of direct approach to inducing wage and price restraint. The story of these efforts down to the Nixon administration is chronicled in Craufurd Goodwin (ed.), Exhortation and Controls. In his January 25, 1983, State of the Union message, even Reagan took an important step on what might prove a salutory slippery slope by urging a wage freeze in the federal government.

What we have never done in the United States is to pause and ask ourselves this question: How could we organize our affairs and institutions in such a way as to provide over the long term a system in which average wage increases were geared to the average rate of productivity increase in a way that was consistent with a vital private sector and judged equitable by labor?

Kennedy's initiatives of 1961-1962 were quite successful but did not meet this test. At the bottom of the recession which existed when he came to responsibility, Kennedy negotiated an *ad hoc* deal by exploiting back-to-back auto and steel wage negotiations which happened to come up in 1961 and 1962. At that time these two industries tended to set the wage increase pattern for much of the economy. The deal, made in the summer of 1961, was: Walter Reuther (automobiles) accepted a 2½% money wage increase on two conditions: David McDonald (steel) would only get 2½%, and there would be no rise in the steel price. The average rate of productivity increase was then calculated at 2½%; and the situation in the steel industry approximated this average. As Reuther predicted, the steel industry announced a steel price rise in the wake of McDonald's settlement at 2½%; and a noisy seventy-two hour battle ensued in April 1962 before the steel price increase was rescinded. The enunciation of formal wage-price guideposts in the 1962 Economic Report of the President to the Congress can only be understood in the context of the Kennedy-Reuther deal.

The upshot was quite impressive. Kennedy's policy yielded an average annual increase in the consumers price index for the period 1961-1965 of 1.3% as opposed to 3.6% for the U.K.; 3.6% for the Netherlands; 3.7% for Sweden; 3.8% for France; 2.8% for Germany. This relative performance strengthened the U.S. balance of payments position within the constraints of the Bretton Woods system and provided the breathing room to expand the domestic economy and enlarge foreign aid by about 30%. But Kennedy's ad hoc deal was never explained to the people with the full weight its importance justified; and the subsequent wage-price guideposts lacked both a legal and institutional basis.

Johnson carried forward the wage-price guidepost policy. But without a firm political, legal, and institutional foundation, it cracked with the airline machinists strike and its settlement in the summer of

1966 — in my judgment, a quite unnecessary failure. But the basic point is that the whole system was infirmly based. It was explicitly abandoned by Nixon on January 27, 1969, unleashing a phase of stagflation and balance of payments deterioration which led him by August 15, 1971, to install wage-price controls.

There is not much point, at this critical juncture in our history, to allocating praise or blame for past efforts at disciplining inflation in American society. But it is useful to examine the efforts of the United States and others to grapple with what is evidently one of the greatest challenges democratic societies have ever faced. Indeed, my first recommendation is that the Executive Branch and the Congress conduct a systematic review of the success stories, partial success stories, and failures in trying to make incomes policies work. The Joint Economic Committee has gone some distance in this direction, but a lack of consensus among its members has prevented it from coming to grips seriously with how incomes policies might be organized in the United States.

Assume for a moment that my analysis is correct and that we require a long-term incomes policy (along with other more familiar anti-inflationary measures) to get real interest rates down, keep them down, and thus release the forces for sustained growth we have thus far skillfully managed to repress. How might we proceed?

We are talking about a major change in the nation's institutional arrangements, affecting all the people, requiring the participation of all the relevant groups in the society. It demands substantial consensus and a sense of equity. We must begin, therefore, with the President. Having decided this course was essential for the general welfare he has sworn to uphold, he would have to build a consensus with the bipartisan leadership of the Congress, business, labor, and citizen groups, and go to the country in a strong, unambiguous way. There is no point making such an effort unless it is done with a total commitment by the President to see it through. To recall Theodore Roosevelt's characterization of the German Chancellor in 1914, this is no business for a President who 'means well feebly.' The optimum time would be early in a new administration. Carter in 1977 and Reagan in 1981 had such opportunities. But Reagan, like Nixon, may be forced in this direction by the course of events in 1983-1984. If he were to throw himself into the effort with, say, as much energy as he expended in achieving the 1981 tax cut, he could be extremely effective.

In any case, every knowledgeable economic analysis of which I am aware concludes on a non-economic note: the mobilization of a political consensus around the simple proposition that it is an over-riding common national interest to achieve regular growth, low unemployment, with inflation under firm control, is fundamental to the success of an incomes policy. And I am deeply convinced that, after our experiences of the past two decades, such a consensus is latent in American public opinion and among a substantial majority of businessmen, labor leaders, and the Congress. But only a determined President can evoke and render effective that consensus.

There is a technical point here which should be brought into the open. It is often argued that a discussion by responsible public officials of incomes policies is dangerous. The expectation of possible wage-price limitations will lead business and labor to anticipate that possibility by raising wages and prices immediately so that they would be in a more advantageous position when the incomes policy is installed. A rollback provision in legislation to implement an incomes policy could deal with the problem; and it may, in any case, be necessary. But the problem could be minimized if the president, after private consultation with the bipartisan leadership, should ask privately for the prompt re-enactment of the 1970 Amendment to the Defense Production Act of 1950. That amendment granted to the president wage and price setting powers. I would guess that it would be granted quite promptly by the Congress. It could contain a rollback provision.

Immediately upon its enactment three actions might be set in motion:

- A major address to, say, a joint session of the Congress outlining the President's strategy and the case for it.
- The convening of a business-labor-citizen's group (including a few senior members of Congress from both parties) to thrash out the legislative basis, institutional shape, and procedures for a long-run incomes policy which would meet the criteria of minimum intrusion on the private sector, equity, and effectiveness. This group would have a major public figure as chairman, of known stubborn determination, and a small, first-class secretariat. The group (subsequently, EOB Committee) should be locked up in the Executive Office Building across from the White House with the understanding that it would be at it full time and steadily until an agreement was reached.

- The imposition of a temporary wage-salary-dividends freeze while the committee deliberated. Agricultural and raw material prices would not be frozen since their international character renders national control measures ineffective and often counterproductive. There might be occasion to monitor prices in certain key quasi-monopolistic industries to assure that the occasion is not seized to shift income from wages to profits; although the dividends freeze would deal with the most corrosive aspect of the problem because the plowback of profits into investment in a firm's capital stock is of fundamental importance for labor's productivity and real wage as well as for future profits.

The freeze, which would hold until a long-term incomes policy system was agreed, would serve the dual function of preventing anticipatory price and wage increases, as the incomes-policy system was being devised and, even more important, eliminating core inflation from the economic system at a stroke, thus permitting the follow-on incomes-policy arrangements to start from scratch.

On the other hand, a freeze should be as short as the public spiritedness of the members of the EOB Committee, the toughness and negotiating skill of its chairman, and the external pressure of public opinion, generated by the President's continued exposition of his policy, can achieve. Ninety days might be about right. Freezes become awkward with the passage of time, preventing necessary shifts in relative wages and, thus, prices.

What might the EOB Committee devise? On this matter I would not attempt to be precise. One should defer to Jean Monnet's dictum about his planning to modernize the French economy launched in 1946: "I am sure of one thing. One cannot transform the French economy without the people participating in the transformation. When I say the people, it is not an abstract entity. I am referring to the unions, business firms, government departments, and all those who will be associated with the plan... ." This would certainly hold for a transformation of wage negotiation procedures in this complex continental society.

The essential elements on the agenda of the EOB Committee would, evidently, be these:

1. A general criterion for average national wage (and salary) increases and criteria for deviations from the average.

2. A time and procedure for negotiating an average wage-increase norm and a single concentrated interval for annual industry negotiations within its framework.

3. Machinery for regular business, labor, and government consultation, throughout the year, without negotiation, on the state of the national economy focused on variables which bear on the scope for non-inflationary wage increases (productivity, unemployment, external inflationary pressures, balance of payments, price changes, etc.).

4. Criteria for maintaining approximately constant shares of labor and capital in the national income (as, for example, in the case of Austria); or, business-labor agreement on an increase in the proportion of income invested, which may well be possible given labor's awareness of the need to rehabilitate old basic industries, increase infrastructure investment, and generally to raise the amount of capital per worker which

has declined in the United States at serious cost to productivity and real wages.

5. A procedure for monitoring prices in quasi-monopolistic industries to assure that the criteria agreed under 1 and 4, above, are carried out.

6. Recommendations for whatever legal and legislative basis for the arrangement may be agreed. This would include examination of whether some form of tax-based incomes policy (TIP), using carrot, stick, or both, would be helpful.

The EOB group should also examine the pros and cons of recommending a version of the Japanese system of bonus as to the working force, depending on a firm's profits; and they should come firmly to grips with the problem of COLA's in both the public and private sectors. The automatic adjustment of wages to cost-of-living increases in no way guarantees the level of real wages (or other forms of income). These adjustments simply perpetuate the inflationary process and, by providing an illusion that real incomes are being protected, weaken the will to control inflation.

Standing back from this array of matters to be agreed by the EOB Committee (and then the President and the Congress), two observations are worth making which may relieve the sense that some such system would put the economy in a straitjacket. First, it should be recalled that what is proposed is not a detailed wage-price control system of the sort we have applied in wartime circumstances or in the first phase of Nixon's

1971-1972 arrangements. Much of our economy is competitive, and it would automatically respond, through market mechanisms, to the wage settlement patterns set in certain key industries and the public sector. Arrangements of this kind have proved thoroughly compatible with vital, flexible, private sectors in a number of countries, including those which have proved most successful in sustaining incomes policies; e.g., Japan, Austria, Switzerland, and Germany.

Second, in one sense what is proposed is the more systematic application for the short term of something like Nixon's wage-price freeze of 1971 to be followed as soon as possible by a more orderly and formal version of Kennedy's guideposts of 1962. Both provided a setting for intervals of important improvement in the nation's economic performance and did no serious damage to the private sector. On the contrary.

Nonetheless, important changes are implicit in the proposals; namely, the way labor unions (and labor leaders) look at their role in the society and businessmen look at their price decisions. By the nature of the proposed institutional changes, business and labor would be required to negotiate in terms of their long-run interests. Every businessman knows that inflation leads to stop-and-go policies, that profits are exceedingly volatile, and that they plummet in recessions. They understand well that a policy to maximize profits over a reasonably long period of time should be non-inflationary. Similarly, labor leaders know that, even if wage settlements manage to keep up with the cost of living under inflationary conditions, which has not been the case over the past decade, the real income of labor will suffer over a reasonably long period of time from the higher average unemployment and reduced rates of investment and productivity increase that are brought about by stop-and-go policies.

At the present time, the heart of the bargain with labor would be rules of wage restraint accepted in return for an expansionary monetary policy. Every central banker in advanced industrial countries, including Paul Volcker, would acknowledge that an effective incomes policy and the prospects for narrowing the budgetary deficit rapid economic expansion would provide, would permit him in good conscience to join in that bargain.

Put another way, business-labor collective bargaining would by no means end under an effective incomes policy. What would end would be wage negotiations, oriented simply to the situation at a moment in time in a given industry, which take the rate of inflation as independent of the outcome of that negotiation and thereby build inflation into that sector for two or three years. In effect, an incomes policy permits business and labor negotiators to reflect their own long-run interests while still leaving them plenty to negotiate about at the margin.

This is not a trivial change. But, given the pass at which we have arrived, it ought to be possible. If the effort fails, we would not be the first society to prefer to go down in the style to which it had become accustomed rather than to face reality. The reality of the past quarter century is that uncontrolled inflation has forced a series of recessions costly to employment, productivity, profit, real wages, our balance of payments, and the nation's social and physical infrastructure.

One final point of personal judgment about incomes policies. [redacted] What I have had to say thus far about incomes policies has assumed that the correct general criterion is an average rate of money wage increase equal to the average rate of productivity increase.

I would, in fact, prefer an alternative formula: average fixed money wages with prices falling with the rate of increase of productivity. I am quite aware of the objections to this formula, notably the rising real burden of debts fixed in money terms; although this would be countered by low interest rates. I would opt for this formula for the following reasons.

— Passing along productivity increases in lower prices would greatly reduce the likelihood of public service (and other) strikes; which are peculiarly disruptive in an era where a quite substantial proportion of the working force is in the public service.

— The formula would make it easier to focus the attention of the society on the rate of productivity increase as the only basis for rising real incomes per worker.

-- In particular, as in the periods 1815-1848 and 1873-1876, when falling price trends prevailed, such a formula would exert strong pressure on technologically sluggish firms to modernize or see their profit margins attenuated.

Labor leaders knowledgeable in economic history are quite aware that, so far as the real wages of labor are concerned, the optimum setting is one of stable money wages and falling prices.

I would not argue my criterion as a decisive issue; but its advantages and disadvantages, as compared with the more conventional criterion, should be considered.

As I have tried to make clear, there is much more to a stable long-run policy to control inflation than an effective incomes policy.

On the demand side, a coordinated fiscal and monetary policy is required to avoid the emergence of demand-pull inflation. Since about two-thirds of the present federal deficit is the product of the recession itself, a return to steady high-growth rates would bring down that deficit and permit a flexibility in fiscal policy now denied us. But full employment and the emergence of bottlenecks would not occur in our great economy simultaneously. There is, therefore, a good case for the Federal Reserve to be prepared to operate selectively by sectors and regions along the general lines of the Japanese method.

On the supply side, the battle against inflation must also be fought sectorally, by anti-monopoly policies, including liberal international trade policies, measures to constrain price increases in particular sectors (e.g., medical services), and by policies to increase raw materials supply, including, in some cases, the building of stockpiles to cope with periods of raw materials-push inflation. Given the peculiar importance of the gyrations in energy prices since 1973 in determining the course of the world economy, and the long lead times of major forms of energy investment, a steady, long run U.S. energy policy is required, the character of which is suggested in section D, below.

Recalling that core inflation is defined by the gap between money wage and productivity increases, a broad-based policy to accelerate the increase of productivity and to diffuse the Fourth Industrial Revolution to all relevant sectors evidently has a central place in a policy to control inflation. Certain particular observations on this problem are included in sections B and C, below. The most important general observation to be made on this point is that the maintenance of a steady high rate of non-inflationary growth is the optimum environment for encouraging both large private sector R & D outlays and the rapid incorporation into the capital stock of new technologies. In a world of rapidly changing technology, investment to replace obsolescent equipment automatically incorporates more productive capital equipment.

An effective incomes policy would have an additional consequence for the behavior of the working force. Once it is clear and accepted that real wages can only be raised in a sustainable way by productivity increases, and that an incomes policy will permit a rapid decrease in unemployment, it might well be possible to elicit sustained support from labor for efforts and new measures to enlarge investment and to introduce new technologies.

The central point is, simply, that the control over inflation -- even with an effective incomes policy -- requires unremitting supplementary efforts on both the demand and supply sides of the equation.

## B. Nurturing the Fourth Industrial Revolution.

The character of the technologies embraced in what I have called the Fourth Industrial Revolution makes it possible for a high proportion of the relevant R&D to be carried forward by the private sector. Assuming that we can create an environment of low real interest rates -- and the expectation of continued low real interest rates -- and assuming that control over inflation permits high and reasonably steady growth in the private sector, we can expect innovation to proceed rapidly, by normal market processes, in exploitation of the microchip in all its ramified applications, new communications methods, the insights of genetics, the robot and laser, and new industrial materials.

There are, nevertheless, three broad areas where the possibility or need exists for public policies to support or accelerate invention and rapid diffusion of the new technologies. There is an important supplementary role for public R&D; a wide-ranging set of tasks in academic research, education, and the training and re-training of the work force; and the need for a substantial public role in certain kinds of investment which would accelerate the diffusion and otherwise support the whole complex process involved in the Fourth Industrial Revolution.

The new technologies differ from some of their great predecessors (e.g., the steam engine, iron manufacture from coke, factory-manufactured cotton textiles, the railroads, steel, the internal combustion engine) in a particular respect. Once the initial breakthroughs were made in most of the older revolutionary innovations, progressive refinements in their efficiency could take place pragmatically, on the job, in the private sector. Those refinements were of immense importance in cutting costs in the leading sectors of their time. But, in general, the process did not require extensive basic research and experimental pilot projects. Conversely, certain of the contemporary revolutionary innovations are linked to scientific fields where basic knowledge is still rapidly expanding; for example, in genetics. That is why we have seen in a number of regions of the country new, vital linkages growing up between the research universities and the private sector. The 1980's is clearly a time for expanded public R & D in support of the fast-moving basic sciences underpinning the Fourth Industrial Revolution.

There is another limited, possible role for public policy. The spectrum running from basic science to invention to commercial application is complex. It can involve many more stages than this oversimplified tripartite breakdown suggests. Quite often a promising invention requires a pilot project of considerable cost and risk to establish whether a cost-effective innovation is likely to emerge. Fusion is an extreme but clear example of this requirement. In some cases, large firms in the private sector are prepared and are in a position to accept the cost and risk of this kind of substantial development outlay. But a good many dimensions of the Fourth Industrial Revolution are being carried forward by small or medium-sized firms. Therefore, it would be wholly appropriate for the government to help finance promising but expensive and uncertain pilot projects in the development stage that are unlikely to be undertaken by the private sector. Similarly, it would be appropriate for the government to provide certain key research universities with funds to purchase the most advanced computers, now mainly restricted to military use in the U.S., but not in Japan and Western Europe.

There is, in addition, one sector in which public R & D has historically played a dominant role because the production units were too small to do the job; that is, agriculture. The shift in the structure of agriculture towards larger units and the emergence of R & D outlays by private firms in the food, fiber, and forestry industries has, to a degree, altered the initial almost monopolistic role of public sector R & D. Nevertheless, its role remains extremely important, notably in the land grant colleges. As the marginal productivity of existing agricultural technologies inevitably decelerates with the passage of time, new technologies must be developed and diffused. The application of genetics to agriculture appears particularly promising and, indeed, is already beginning to yield practical results. The fostering of this linkage and other potentialities for new agricultural technologies belongs on the agenda of public policy.

A second role for public policy in the Fourth Industrial Revolution lies, evidently, in the field of education: from the primary schools to the graduate schools and faculty research. It was wholesome that this role was, to a degree, recognized in Reagan's State of the Union Message of January 25, 1983, as well as in the film incorporating the Democratic view of the state of the nation broadcast that evening. The issues are now before the public and increasingly familiar: from the weaknesses in elementary school training in mathematics and science to the shortage of graduate scientists and engineers, and the obsolescence of university laboratories. A protracted stubborn effort at local, state, and national levels to invest more in education and to alter its balance will be required to provide the fundamental underpinnings for a successful diffusion and management of the Fourth Industrial Revolution.

The linkage between the existence of first class concentrations of academic research and the presence of hi-tech industries is palpable, although a number of other factors appear also to affect plant location. The presence of clusters of research universities clearly helps account for the extraordinary R & D concentrations in California and Massachusetts. A wholesome process of diffusion is now taking place as the quality of research universities improves in many parts of the country. By and large, the fastest rates of growth in hi-tech employment have been in the Southwest and Southeast, with the older manufacturing belt, despite its well-established university base, falling behind, as Table 4 demonstrates.

## TABLE 4

## RELATIVE DISTRIBUTION OF HIGH TECHNOLOGY JOBS BY SELECTED STATE: 1979 and 1975

| State | Percent of U.S. High-Tech Employment 1979 | Percent of U.S. High-Tech Employment 1975 | Percent Change 1975-1979 |
|---|---|---|---|
| Western States | | | |
| Arizona | 1.59% | 1.28% | 24.2% |
| California | 15.85 | 14.40 | 10.1 |
| Colorado | 1.46 | 1.30 | 12.3 |
| Texas | 3.96 | 3.28 | 20.7 |
| Utah | 0.49 | 0.37 | 32.4 |
| Washington | 0.53 | 0.35 | 51.4 |
| Nevada | 0.10 | 0.06 | 66.6 |
| New England States | | | |
| Connecticut | 2.60 | 2.70 | -3.7 |
| Maine | 0.29 | 0.21 | 38.1 |
| Massachusetts | 6.13 | 5.80 | 5.7 |
| New Hampshire | 1.00 | 0.70 | 42.9 |
| Rhode Island | 0.53 | 0.55 | 3.6 |
| Vermont | 0.44 | 0.38 | 15.8 |
| Mideast/ Great Lake States | | | |
| Illinois | 6.69 | 7.89 | -15.2 |
| Michigan | 2.54 | 2.51 | 1.2 |
| New Jersey | 5.02 | 5.75 | -12.4 |
| New York | 10.34 | 11.74 | -11.9 |
| Ohio | 4.46 | 5.11 | -12.7 |
| Pennsylvania | 5.79 | 6.75 | -14.2 |
| Minnesota | 2.89 | 2.60 | 11.2 |
| Southern States | | | |
| Florida | 2.71 | 11.10 | 29.0 |
| Georgia | 0.78 | 0.65 | 27.7 |
| Maryland | 1.03 | 1.00 | 3.0 |
| Virginia | 1.11 | 1.23 | -9.8 |
| North Carolina | 2.31 | 1.89 | 22.2 |

SOURCE: Calculated from High Technology Employment in Massachusetts and Selected States, Massachusetts.

Reproduced in "Location of High Technology Firms and Regional Economic Development," a Staff Study prepared for the use of the Subcommittee on Monetary and Fiscal Policy of the Joint Economic Committee, Congress of the United States, June 1, 1982, p. 13.

Reagan also brought into public discussion at the highest level the question of retraining workers, believed to be off-loaded permanently from the older basic industries, for jobs in the high technology or service sectors. There is, no doubt, a legitimate public role for this kind of activity. I would observe, however, as an economic historian, that it should be a reserve role. The best training for jobs has been done by firms that needed additional labor. The factories have been, without question, the most efficient vocational schools. In a high growth, low unemployment economy it will pay private firms (or consortia of private firms) to finance the retraining process, perhaps with some tax incentive. This would not deny the need for some publicly financed retraining; but to the maximum extent possible, the private sector should undertake the task.

Finally, there is a legitimate public role in helping provide infrastructure to accelerate the diffusion of new communications. It has been suggested, for example, in a recent British study that the communications revolution could be radically accelerated if consumers were provided with the basic facilities to permit exploitation of two-way communication ("tele-shopping"), financial services ("tele-banking"), and other possibilities. The costs were estimated in the range of $5-20 billion in a country the size of the United Kingdom or the German Federal Republic. Most of the financing could be by the private sector; but, aside from encouraging the enterprise, public policy would have to assume responsibility with respect to standards, definition of responsibilities, and links with existing telecommunication networks.

In such an enterprise, a measure of public investment would also be necessary to assure that the educational, medical, and other social potentialities of the communications system were provided. Those potentialities might well include the use of television and other modern communications systems in job retraining.

This is a matter of considerable importance. The fact is that in education and research (including interaction among research groups and between research groups and the private sector) the potentialities of existing communications technologies far outstrip the uses to which they are now being put. The outcome is a joint product of the failure of public authorities to provide the communications infrastructure and the extraordinary sluggishness and conservatism of academic administrators and teachers. (I speak as one who began teaching in 1940.) There are, it is true, certain kinds of communication in academic life which must remain bilateral or be conducted in small, intimate groups. There is no substitute for direct, private talks between student and teacher and protracted, exploratory talks with colleagues on difficult unsolved problems. But important parts of academic life could be conducted more efficiently by means of television and other forms of communication. The possibilities of two-way communication, permitting live questions and discussions, should enrich such teaching. Similarly, new forms of communication could permit intimate, sustained two-way discussions among those conducting research in similar fields and, even, the holding of seminars among participants in different places.

Such communications could also permit easier and more regular exchanges between business firms and those doing related research in universities, a form of exchange now rapidly increasing.

## C. Rehabilitating the Older Basic Industries.

There is a quiet, serious debate going on among economists and others over whether the United States requires an industrial policy: that is, a publicly financed effort to rehabilitate the older basic industries.

On the one hand, there are those who argue that the falling behind of certain basic industries has gone so far, in a prolonged process, that the scale of investment to modernize their capital stock is beyond the capacity of firms whose cash flow has been attenuated by the combined effects of a series of recessions and the pressure on profits of unrelenting foreign competition. Therefore, a government investment bank, like the RFC of the 1930's, should be created to provide both necessary capital and loan guarantees which, in effect, lower the rates at which they can borrow in the capital market.

On the other hand, there are those who hold that public subsidy will waste resources by sustaining industrial structures that simply can not survive in an environment of international competition. They argue that it is both bad economics and bad public policy to sustain such white elephants. The rigors of competitive markets should decide which firms and industries survive and which fail; for, once committed, governments will be pressed hard to throw good money after bad and, soon or late, will seek self-defeating protectionist measures to keep the firms and industries afloat. Indeed, the central thrust of the steel industry is that tariffs or other forms of substantial protection are already required and justified given the fact that foreign steel firms, government-owned or operating with government support, are using the U.S. market as a dumping ground for steel sold far below prices in foreign domestic markets.

There is a good deal of evidence in support of the sceptical view. Government subsidies of one kind or another can permit the modernization of equipment at lower cost than, say, the flotation of new issues in the private capital market; and a protected domestic market would increase the cash flow of firms at considerable cost to the consumer and to U.S. export interests in other sectors. But more than new equipment is involved in reversing the decline of an industry. Vital new management is often necessary and a change in workers' attitudes. The experience of the United Kingdom with government subsidies to industry is, for example, by no means uniform, but, on balance, it is not encouraging. Management was not, in all cases, adequate to lead the turnaround to competitiveness and, for whatever reasons, labor did not always join in what had to be a partnership effort if it were to succeed. The experiences of France, Germany, and Japan with industrial policies are, on balance, more hopeful.

Under clearly specified conditions, I am inclined to believe a selective program of public assistance in the revival of basic industries may be useful. I hold that view because of the multiple forces that have brought the basic industries to their present weakened status and the complexity of the problem of an effective return to competitive status.

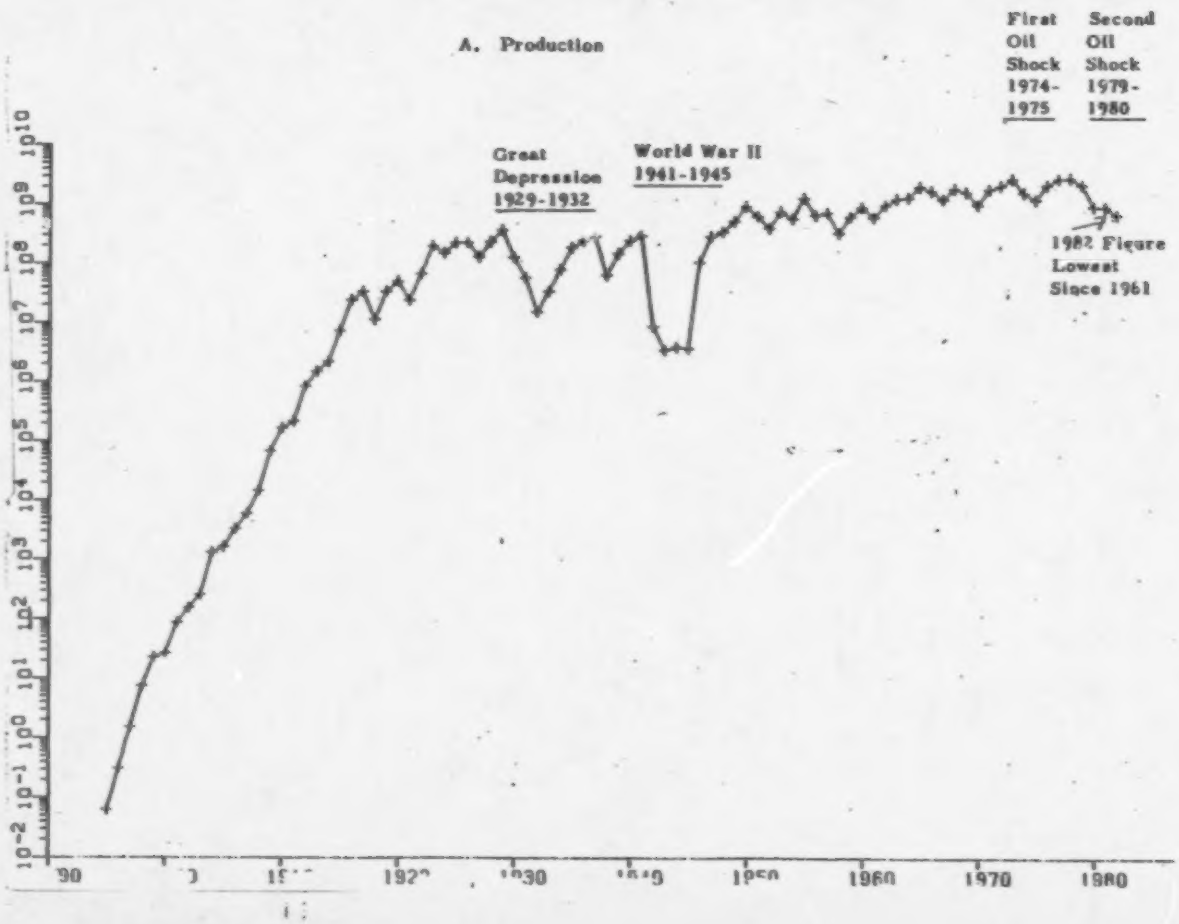
By way of introduction, it is worth noting that the U.S. motor vehicle industry is at the center of the story because a substantial proportion of the output of other basic industries flows as inputs to the manufacture of motor vehicles. As early as 1938, 17% of steel in all forms, half the output of strip and alloy steel, 90% of rubber manufacture, 90% of gasoline production were linked to automobile manufacture. Table 5, based on an input-output table calculated by Wassily Leontief, exhibits the effect on employment of a $1 billion decline in automobile sales in 1973-1974.

## TABLE 5

## Estimate of Employment Reduction Associated with a Decline of $1 Billion in U.S. Automobile Sales, 1973-1974

| Industry | Employment Decline |
|---|---|
| Motor vehicle manufacturing | 22,900 |
| Other industries: | |
| Iron and steel | 4,600 |
| Fabricated metal products | 4,170 |
| Nonelectrical machinery | 2,650 |
| Textiles | 1,900 |
| Electrical machinery | 1,840 |
| Rubber | 1,340 |
| Glass | 760 |
| Wholesale and retail trade | 4,420 |
| All other | 11,360 |
| Total, other industries | 33,040 |
| Total, all industries | 55,940 |

Source: Wassily Leontief, reported in The New York Times, December 8, 1974.


A. Production
First Oil Shock 1974-1975
Second Oil Shock 1979-1980
Great Depression 1929-1932
World War II 1941-1945
1982 Figure Lowest Since 1961
$10^{10}$
$10^{9}$
$10^{8}$
$10^{7}$
$10^{6}$
$10^{5}$
$10^{4}$
$10^{3}$
$10^{2}$
$10^{1}$
$10^{0}$
$10^{-1}$
$10^{-2}$
'90
1930
1950
1960
1970
1980

6B. RATE OF GROWTH

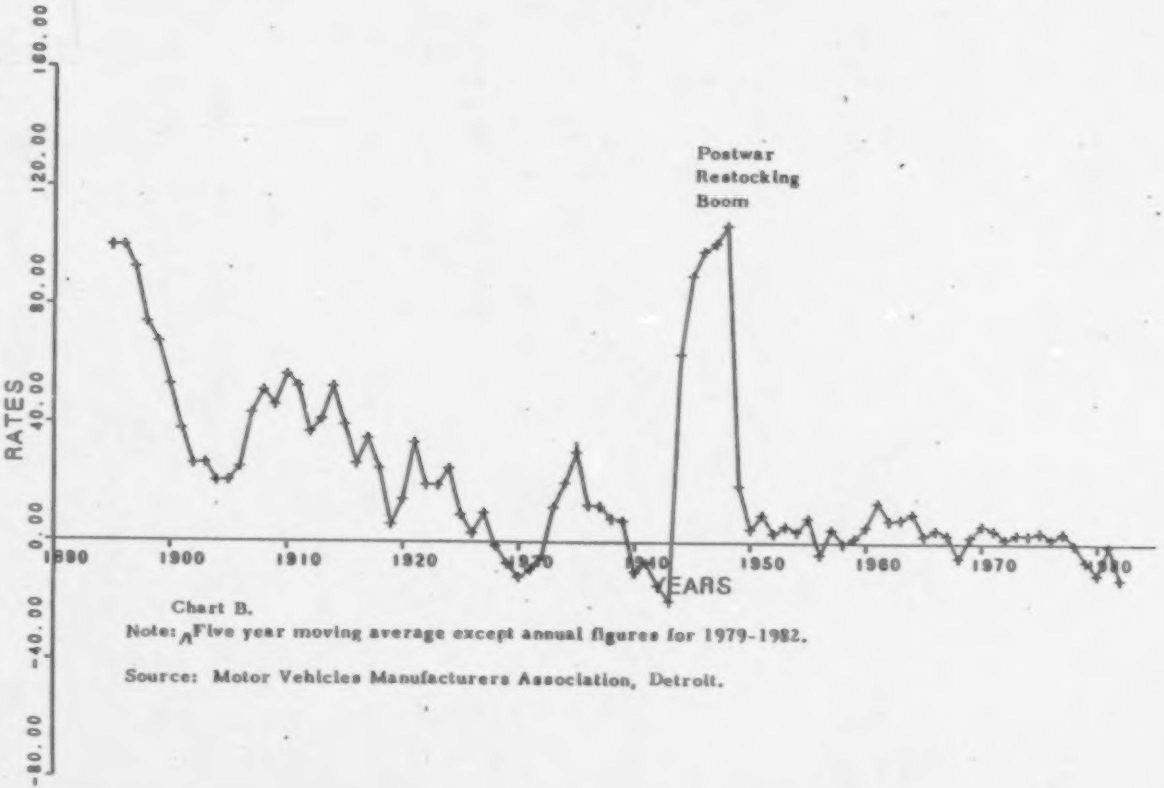


Chart B.

Note: Five year moving average except annual figures for 1979-1982.

Source: Motor Vehicles Manufacturers Association, Detroit.

As of 1978, about 21% of steel output of all kinds still flowed to the automobile industry; in depressed 1982, about 15%.

There is, of course, more to the rise and decline of the basic industries than the early glory and later vicissitudes of the U.S. motor vehicle industry (see Chart 8), but the linkage is significant.

At some risk of over-simplification, the rise and decline of the American basic industries can be seen as a sequence with the following characteristics:

-- An initial advantage (reaching back to the second decade of the century) arising from the precocious U.S. entrance into the age of the mass automobile which provided a technological lead in steel, machine tools, rubber, oil refining as well as in motor vehicle manufacture itself.

-- This advantage led to an environment of complacency in management and a neglect of R&D. In their prime these industries generated leaders whose background and interests led to failures of understanding and communication between top management and those conducting R&D as well as underfinanced and misdirected R&D efforts. A good many inventions that emerged from U.S. R&D laboratories in basic industries first appeared as innovations abroad. The emphasis here on the quality of management and, especially, on the weak linkage of management to the potentialities of R&D in the old basic industries may appear to some to be over-drawn. But it should be recalled that the American industries which have maintained their competitive vitality all arose from laboratories and sustained strong, continuous ties to R&D; for example, electricity and electronics, chemicals, and aerospace. American agriculture, too, with its intimate ties to the land grant colleges, belongs in this category. Parallel, sustained linkages were never built up in motor vehicles, steel, and machine tools.

-- The prosperity of the industries in the period (say, 1945-1970), led labor to seek and management to grant high real wages and permitted labor leaders to concentrate on maximizing the labor share rather than on the long-run viability of the industry and its employment prospects.

-- When the U.S. basic industries were challenged by the arrival of the mass automobile age in Western Europe and Japan in the 1950's and 1960's, they were vulnerable. The industrial equipment in Western Europe and Japan was new, their rates of growth were much higher than in the United States, permitting large-scale plow back of profits, the leadership was more open to new ideas and on the attack rather than the defense. U.S. automobile imports began their rapid rise in the second half of the 1960's.

-- The rate of growth of the motor vehicle sectoral complex (including steel) decelerated sharply in the late 1960's and was hit doubly hard by the explosion of energy prices in 1973-1974 the rise in energy prices both reduced the real incomes of potential automobile purchasers and induced economy of use, including the purchase of smaller imported vehicles. The easing of the real price of oil in the period 1975-1978 then sent a confusing signal: a good many U.S. consumers, now sceptical of the reality of an energy crisis, turned back to larger U.S. models and the newly produced small U.S. cars did not sell well. Then came the second jump in oil prices which convinced the consumer about small cars; but his position was weakened by high interest rates, a fall in real wages and high unemployment. With the industry in palpable danger, labor cooperated to help salvage Chrysler; but employment fell off severely in the whole group of industries linked to the fate of U.S. motor vehicle manufacture.

-- Meanwhile, with investment in plant and equipment generally low after 1979, orders for steel, machine tools, and other basic industry products fell off quite aside from reduced orders from motor vehicle manufactures.

-- With profits reduced or negative and capacity utilization low, it was hard to justify or to finance large capital outlays to modernize plant.

Thus, in steel production, as of 1978, the U.S. was using 43% more energy per ton of steel than Japan; as of 1979, 53% of Japanese steel was produced by continuous casting versus 17% in the United States. In 1980 Japanese automobile and steel production for the first time exceeded that of the United States.

This was the disheartening setting in which some analysts took the view that the day of the older basic industries had passed, and it was time to let them go and move along to an information and service society.

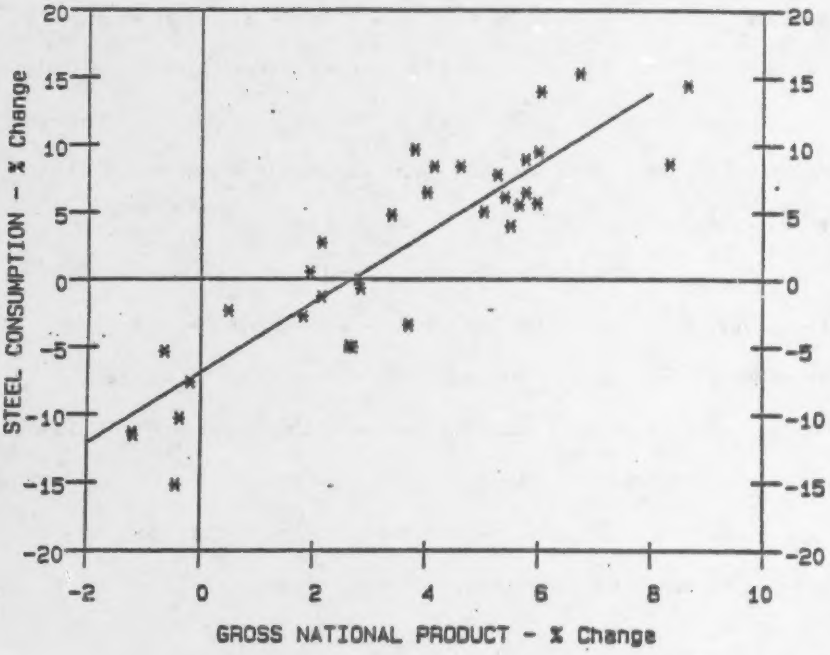
As indicated earlier (pp.   , above), I am sceptical that such a conclusion is justified; and I specified forces or potential forces at work which could radically alter the outlook for the basic industries.

The first condition for success in such an enterprise in revival is to get the economy moving forward on a path of sustained noninflationary growth. No one can be sure how much of the present distress of the basic industries is due to a structural loss of competitive viability and how much due to a deep recession marked by the high interest rates. But analyses of the steel industry suggest a powerful and quite stable link between U.S. steel consumption and changes in real GNP, over the period 1960-1981 (see Chart 7). Palpably, the effort to control inflation by high real interest rates has borne with peculiarly heavy weight on the older basic industries.

Clearly, the gravity of the structural problem confronted in the steel and other basic industries can not be assessed until we return to sustained high growth rates. Or, put another way, if we do not return to sustained high growth, no industrial policy in the United States is likely to be effective. Moreover, a sustained U.S. noninflationary boom would lead the world economy back to sustained growth and reduce the pressures for dumping by foreign manufacturers on the U.S. market.

Chart 7

Calculated Relationship Between Steel Consumption and GNP, 1960-1981



Average Behavior

| Percent Change in GNP (1972 $) | Percent Change in Steel Consumption |
|---|---|
| - 2.3% | - 12.9% |
| - 1.3 | - 10.3 |
| - 0.3 | - 7.7 |
| + 0.7 | - 5.1 |
| + 1.7 | - 2.6 |
| + 2.7 | 0 |
| + 3.7 | + 2.6 |
| + 4.7 | + 5.2 |
| + 5.7 | + 7.8 |

Source: Elizabeth Bossong, Manager Economic Research, United States Steel Corporation.

The second condition for a revival of the basic industries is the emergence of leaders capable of understanding the implication of the new technological possibilities and who are comfortable with the process of innovation. One aspect of the latter quality is an ability to foster a sense of authentic partnership in the effort with the labor force and union leadership.

The third condition is that there be a serious answering response from the union leadership of the kind exhibited by Douglas Fraser when Chrysler was *in extremis*.

If these three conditions were satisfied -- a setting of sustained expansion, vigorous innovational entrepreseurship, and labor cooperation -- it might prove to be the case that private capital markets would be willing to take the risks of financing the massive re-equipment that the basic industries evidently require. But the estimated orders of magnitude are large; and it is wholly possible that loans or loan guarantees by some new version of the RFC might be necessary, and, in the end, highly profitable to the society. To avoid the emergence of white elephants requiring one form or another of corrosive, protracted public subsidy, the administrator of a new RFC would have to be in his time as hardheaded and demanding as Jesse Jones was a half century earlier.

I would greatly prefer explicit subsidy to that other form of subsidy we call protectionism. The battle to assure that GATT rules are honored is legitimate and should be conducted with vigor and a sense of legitimacy. There is an element of truth in the proposition that most other governments in the advanced industrial world press harder their industrial interests than the United States. But there is a great deal more to the problems of the basic industries than "unfair foreign competition." Tariffs or other forms of protectionism would offer no guarantee that industry and labor in the basic industries would undertake the measures required for a reversal of their recent decline; and a U.S. adoption of protectionism in the basic industries might be a decisive blow to the hard pressed liberal world trading system which is one of the major achievements of the post-1945 world.

### D. Coping with the Fifth Kondratieff Upswing.

The analysis in Chapter 5 suggests that policy towards investment in food and raw materials (including the control of environmental degradation) is, on balance, likely to remain a major feature of the 1980's and beyond. But, evidently, as of 1983 the softening of energy prices is an urgent matter and is an appropriate place to begin (see Chart 8). As we are all acutely aware, the gyrations of the oil price since 1973 has been a powerful, but not exclusive, force in determining the fluctuations and trends in the world economy. The sharp recessions of 1974-1975 and 1979-1980 were clearly related to the two oil price increases. The recession of 1981-1982 was not: it was the product of a purposeful monetarist effort to wring inflation out of the American economic system,

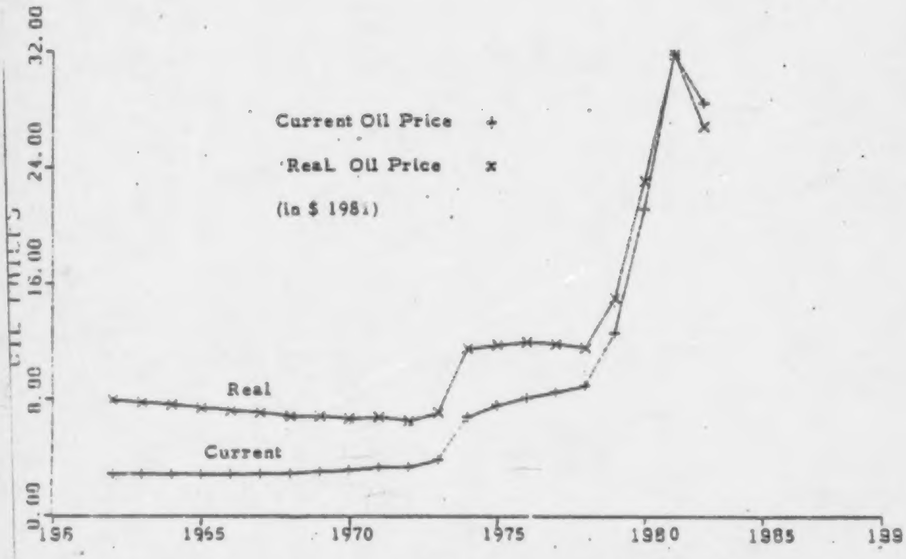
## Chart 8

## The Real Oil Price: Two Versions

### 8A

Current and Real U. S. Crude Oil Prices

1962-1982



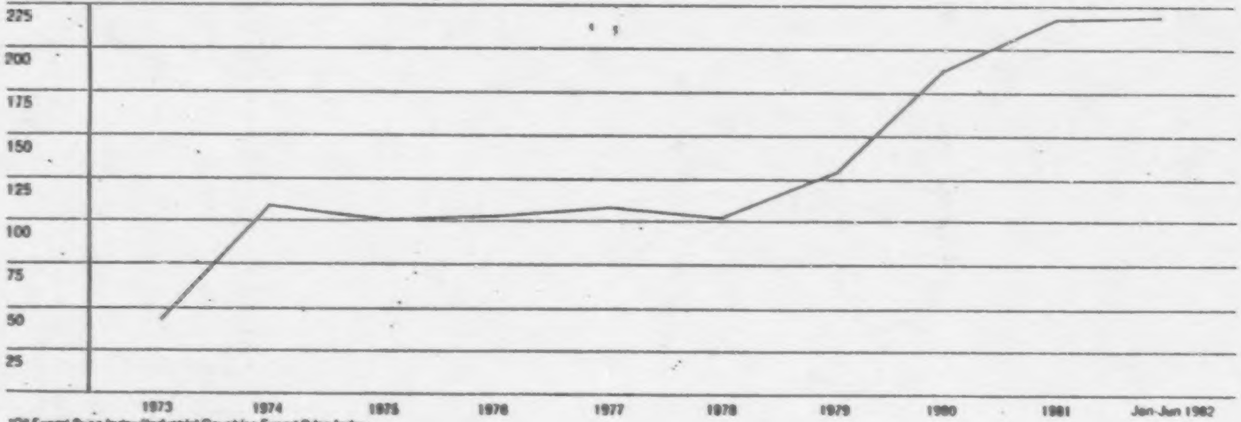
Note: U.S. oil price controls damped the increase in domestic prices down to decontrol in 1981, relative to the course of international oil prices.

Source: United States Petroleum Statistics 1982 (Preliminary).

Note: Adjust to horizontal time scale of 7-A

Chart 8-B

Purchasing Power of a Barrel of OPEC Oil in the Industrial Countries*, 1973-1982
(Index: 1975 = 100)



*Oil Export Price Index/Industrial Countries Export Price Index

Source: IMF International Financial Statistics.

conducted against a background of falling real (and, for a time, absolute) oil prices and declining agricultural prices.

The two upward convulsions in oil prices set in motion efforts in conservation, substitution for oil, and increased non-OPEC oil drilling which altered the structure of energy demand and supply. This process reduced the role of OPEC in the world energy market from about 65% of non-Communist world oil consumption to about 40%. The stagnation of the world economy in the period 1979-1982, against this background, yielded an unprecedented absolute decline in world energy consumption. This did not occur in 1974-1975.

There is an irony here which should, parenthetically, be noted. Macroeconomics does not regard movements in particular prices as relevant to the over-all course of production and prices. Such movements are viewed as changes in relative prices. But, in fact, since the close of 1972 the over-all course of the world economy has been substantially shaped by the erratic interaction between energy prices and the macro-performance of particular economies. In fact, the short-run political fate of the nominally monetarist Reagan administration will be greatly affected by the course of real oil prices in 1983-1984.

To maintain minimum control over world prices in the face of the circumstances of 1979-1983, OPEC was forced to cut production from about 31 million barrels of oil per day (mbod) in 1979 to 18 in 1982. Saudi Arabia absorbed about half of this decline, reducing its output from a peak of about 10 mbod (perhaps higher) to 4 (perhaps lower).

In March 1983 OPEC, after protracted negotiation, appeared to agree on a price cut and the distribution of the burden of a further reduction of about 1 mbod in production estimated as required to prevent a further decline in world oil prices at the bottom of the world recession. As noted earlier (see above, p. ), it was uncertain whether this agreement would recapture stability in the world oil market.

Whether OPEC would maintain discipline in the face of its fragile agreement of March 1983 or be caught up in a competitive price war for market shares was a matter for speculation. But the short-run prospects for the world oil price were probably for either stability or some further decline.

In the latter case, the general effects of such a development were evident enough; for they would simply reverse, in a milder form, the impact of the two oil price jumps of the 1970's.

For oil importers, there would be a rise in real income, a stimulus to consumption expenditures, a general dampening effect on the inflation rate. Within the United States, energy exporting regions would be adversely affected; but that process would also reduce revenues from the so-called windfall profits tax and thereby tend to enlarge the federal deficit. The oil price decline of 1980-1982 caused a sharp reduction in marginal oil drilling as well as a shelving of plans for synthetic plants. Energy-related investment, which had become a high proportion of total non-residential housing investment by 1981, was already declining in

1982-1983. The number of oil and gas drilling rigs at work, 4,160 in February 1982, was 2,192 twelve months later. A further energy price decline would exacerbate this trend. There might also be, as in 1976-1979, a tendency for consumers to purchase larger automobiles as gasoline prices eased, a phenomenon detectable in the last quarter of 1982 and early in 1983.

In the developing world, oil importers would experience an easing in their balance of payments positions (e.g., Brazil and India); oil exporters (e.g., Mexico, Venezuela, Indonesia, and Nigeria) would face further difficulties requiring, quite possibly, concerted international financial support.

If we could be confident that the downturn in the world oil price signalled the beginning of a protracted phase of cheap energy in the world economy -- or, even, of constant energy prices -- the turn of events could be wholeheartedly welcomed. Despite the vicissitudes of energy-producing countries and regions, cheaper energy is better for the world economy than expensive energy.

The problem is that no one can confidently project the effects of a revival of the world economy from its three years of virtual stagnation on the demand for energy in general and oil in particular. Two questions are imbedded in this problem: How strong and pervasive will the expansion be? How has the demand for energy (and oil) been structurally transformed by the erratic rise in the real price of energy since 1973?

Put another way, by how much has the over-all energy (and oil) content of a unit of real GNP been permanently lowered in the various nations and regions of the world economy, and will that decline level off or proceed on a downward path? Clearly, a good deal of both energy conservation and diversification to non-oil sources of energy has occurred; i.e., but no one knows how much or whether it will result in a progressive decline or constitute a once-over change which will yield a renewed rise in energy consumption when economies resume expansion.

In a lucid effort to grapple with this complex problem, my colleague Michael Kennedy has made the following calculations.

He first breaks out the components in the dramatic decline of OPEC production between 1979 and 1982 as follows:

OPEC's Short-Run Problem (mbod)

| | |
|---|---|
| Output in 1979 | 31.5 |
| Decrease in World Demand | 7.5 |
| Increase in World Supply (mainly Mexico and U.K.) | 2.0 |
| Inventory Swing | 4.0 |
| Output in 1982 | 18.0 |

Kennedy assumes that half the decline in world oil demand was due to conservation, induced by high oil prices, half due to the recession.

Looking to the future, he assumes as a base case no disruption in OPEC oil supply; average 3% real growth in the world economy; an effective OPEC oil production limit of 27 mbod; and a price elasticity of demand of −0.6%. The latter means that a 1% rise in the real oil price results in a decline of 0.6% in the amount purchased.

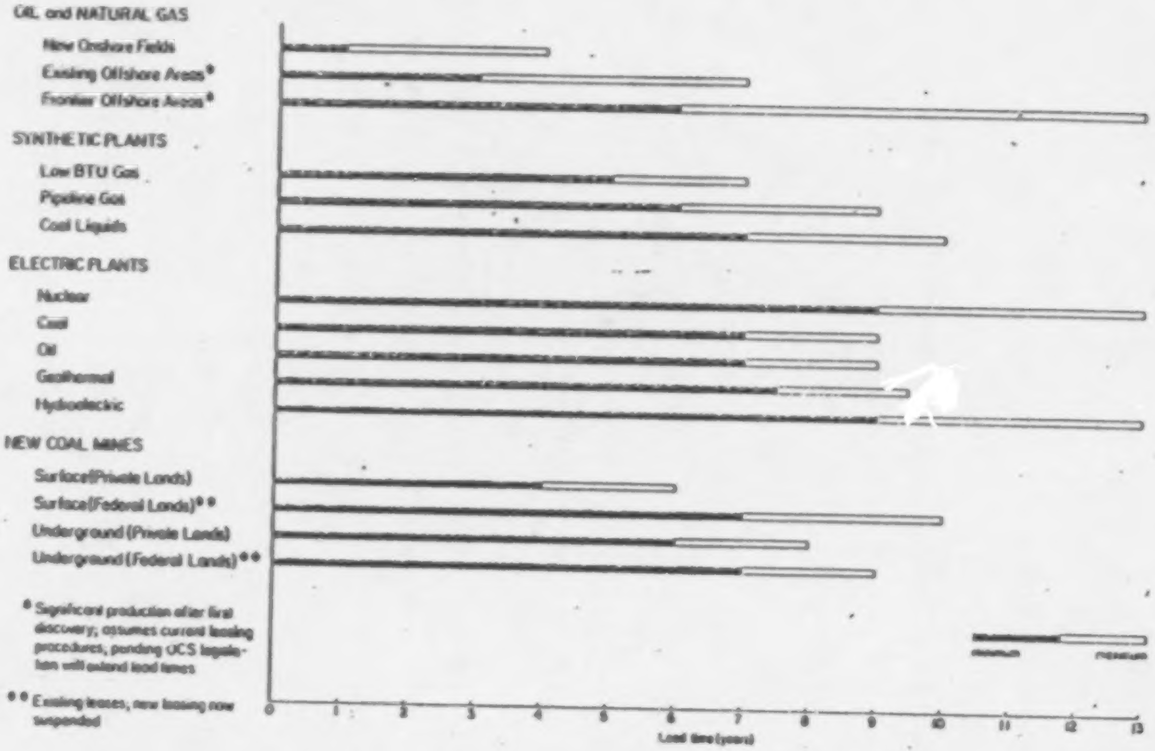
In the next few years he assumes two factors will operate to increase the world demand for oil; namely, a reversal of the sharp rundown of inventories in recent years and recovery in the world economy. On the other hand, he assumes large (9 mbod) excess capacity in OPEC; and this surplus overhanging the market prevents a price increase down to, say, 1985. From that time on, an annual rate of increase in the real price of oil of 4.5% unfolds down to the year 2005. If effective OPEC production capacity is assumed to be 23 mbod (rather than 27), the price rise begins promptly with world recovery; if taken at 31 mbod, the price increase comes later (1990). In alternative scenarios, the course of the real oil price in an econometric exercise of this kind also proves sensitive to assumptions about the rate of real growth in the world economy and the price elasticity of demand for oil. But under all scenarios, there is a rise.

Such speculative calculations would be of merely academic interest if the production of energy was promptly responsive to market prices and expected short-run profits. We could stand back and watch unfolding events give us the answer.

There are two reasons this cheerful acceptance of the short-run market outcome is unsatisfactory. First, important types of energy investment take rather long periods of time. Chart 9 exhibits calculations

Chart 9

Lead Times in Domestic Energy Development



Source: Modified from National Academy of Engineering (1973) and U.S. Geological Survey (1975).

of lead times for various kinds of energy investment. Energy R&D evidently has even longer lead times; and the reduction of such outlays by the Reagan administration may prove quite costly.

Second, standing back from the sequence of fluctuations in the real price of oil, it is clear that the trend in that price (and energy prices in general) has been upward since 1973 (see Chart 7, p. , above). There are, in my view, good reasons to believe that the basic analysis of energy experts over the past decade has been correct; namely, that the world economy faces a historical transition of uncertain length away from oil to other energy sources and probably a resumption of a rise in the real price of oil. New finds have been and, no doubt, will continue to be made; and the extremely intensive drilling after the second oil price increase in areas with known reserves halted, for a time, the decline in U.S. oil production. But the prospect remains that, under normal growth in the world economy, the real price of energy would, in time, continue to increase and the diversification of the world's energy base towards coal, nuclear power and other energy sources go forward.

It would be difficult to construct a less rational or satisfactory way of adjusting the world economy to the realities of the energy situation and prospects than that which history provided in the decade 1973-1983: two convulsive price increases, the second clearly excessive, followed by two periods of decline in the real oil price. The periods of oil price remission were caused in good part by the recessions imposed by the price increases. The world economy responded to each short-run movement like a cork in the sea. Both producers and consumers acted as if current market trends would persist. This yielded, in each phase, exaggerated responses, including, in some cases, long-term commitments that had to be painfully reversed.

Rational long-run policies are rarely achieved in a complex world economy, notably in a field where the policies of sovereign governments play so large a role. Nevertheless, we should strive to do better over the next decade than we did in the painful decade behind us.

One might well respond that the ideal solution would be for OPEC to break up and let competitive market forces take over as, say, in the world's grain markets. Putting aside the real elements of government intervention in the relatively competitive grain markets, the problem with respect to oil is its marked difference from most other commodities. Large additions to productive capacity are created in a rather odd way. A great deal of high-cost drilling is required to establish major new fields. As noted earlier, it is an extraordinary fact that 90% of the world's oil production is derived from 5% of its oil fields. Once established, the marginal cost of lifting oil from them is low; and the risks in further drilling, to develop fully the potential output of a known field, are much less than for authentic exploratory drilling. But in all cases, the pumping of oil runs down reserves which must be supplanted if the production level is to be maintained. The upshot is that the price of oil must cover the high risk of exploratory drilling if an adequate incentive to maintain (or expand or minimize the decline in) production levels is to exist. Conventional short-period price analysis is, thus, quite inadequate. And this is why oil production has tended to fall under one form of monopolistic arrangement or another in which production was restricted to maintain, more or less wisely, the long-run viability of this peculiar industry by prices in excess of the marginal cost of pumping oil from existing fields.

Historically, the unpopular and apparently sinister process of restraining production to maintain an oil price consistent with drilling on a scale capable of replacing or enlarging reserves has been conducted, with greater or lesser wisdom, by sequence of four monopolistic institutions: the Standard Oil Trust, when the bulk of the world's oil came from the eastern United States; the Texas Railroad Commission, when its locus shifted to Texas; the "Seven Sisters," when American, British, and Dutch firms discovered and developed oil on all the continents; and, then, OPEC.

If OPEC, which seized in 1973 the role of long-run price setter from the international oil companies, should disintegrate, a cut-throat price war is conceivable in which each oil producer would seek to maximize his market share and short-run foreign exchange revenues. It is because the consequences for all oil producers would be so disastrous that one would expect, if minimum rationality prevails within OPEC, that the producers would continue to agree on somewhat reduced production quotas and a somewhat lower price. But minimum rationality may not prevail, and we could experience a phase of radically lowered prices with temporary benign effects. The effects would be temporary because an extremely low price would simultaneously run down existing reserves and discourage investment in both oil exploration and the development of long-run alternatives to oil. After a cheap oil binge, the world economy would, depending on its rate of growth and the effects of cheap oil on energy economy, confront another energy price crisis for which its lagging energy investment had rendered it singularly ill-prepared. Indeed, some analysts believe negative investment responses to the falling real price of oil in the past several years have already posed that danger for the mid- or late-1980's.

What are the implications of all this for U.S. energy policy? I believe that the U.S. should pursue steadily the purposeful goal of seeking minimum dependence on oil imports, notably imports from the volatile Persian Gulf area; and it should systematically prepare for its almost certain future role as a large coal exporter and producer of synthetics from coal and shale. This means also that public policy should continue to encourage energy conservation.

Specifically, if a true oil price war breaks out, the U.S. should shield the American economy from its impact on production and conservation by an oil import tax; although the occasion might be used rapidly to fill up the nation's oil strategic reserve at low international prices. The impost tax should be structured to hold the domestic oil price steady, rising with a decline in the international oil price, falling with an increase.

If OPEC holds together, the United States should act in three ways. First; it should recognize that the total effect on the U.S. economy of importing a barrel of oil differs from that of producing an equivalent amount of energy at home. There are adverse balance of payments, inflation, employment, and security factors that ought to be taken into account. The minimum difference is estimated at about 30% by Professor William Hogan of Harvard. A tariff on imported oil is, therefore, justified. Second, public policy should continue to support strongly energy R&D and support the preparations for a future large-scale synthetics industry and a large coal export capability. Third, the U.S. should encourage the emergence of a global institution, embracing producers and consumers, which would seek to achieve continuity in supply and less volatile price movements than those experienced in the past decade which have gravely damaged the interests of both producers and consumers. The task would not be easy. Since its beginnings in 1960 OPEC itself has had to try to reconcile the conflicting interests of foreign exchange surplus and hard-pressed developing countries -- a tension now complicated by intense political conflicts. On the producers' side, the non-OPEC exporters would have to find ways to work with OPEC. And then common ground would have to be found among the importers and between exporters and importers. Nevertheless, such arrangements have existed and, at times, done useful work with respect to coffee, tin, and, before the Second World War, timber. The USSR participated in the latter consultative group. The objective would be to make gradual, incremental price adjustments in the light of both short-term market circumstances and the legitimate long run interests of both producers and consumers.

The actual price outcome over a period of time would depend on these four factors:

- the rate of growth experienced in the world economy;
- what new oil discoveries prove to be;
- the policies towards their reserves of oil producers; and
- the degree of seriousness of oil importers with respect to their investments in the production of all forms of energy and in energy conservation.

Energy is by no means the only area where enlarged investment to provide a satisfactory resource base for the American economy is required. For example, the declining Ogalala water basin, running from the Texas Panhandle to Nebraska, poses a major problem for the nation as well as the region. The maintenance of high agricultural productivity will require some combination of water economy, increased efficiency in dry farming, and, if feasible, water transfers. And there is a range of other water problems in other regions, some of which fall under the rubric of infrastructure, discussed in section E, below. There are also problems of maintaining the forests for the long pull as a source of timber and areas of recreation and of providing a flow of investment to sustain an environment of clean air and water. In different degree all of these resource problems involve issues of public policy.

The most urgent resource problems requiring a change in public policy, however, lie in Latin America, Africa, the Middle East and Asia and in the relations between those southern regions and the industrial north.

Chapter 5 outlined the case for regarding their problems of energy, food, raw materials, and the control of environmental degradation as key to the creation of a long run North-South partnership effort. I presented this proposition as flowing naturally from my view of the world economy as still caught up in the Fifth Kondratieff Upswing, despite the current softening of energy, agricultural, and industrial raw material prices. Chapter 5 also cited estimates of the very large investments required to provide those regions with a resource base capable of sustaining the high rates of growth which are normal and required given their intermediate stage of development and generally high rates of population increase. Finally, their rising importance as export markets for the U.S., Western Europe, and Japan was underlined.

I might note, parenthetically, that the concept that a North-South partnership should be built on the basis of an authentic common interest in this array of resource problems has been widely perceived without the benefit of an economic historian's conclusion that we are experiencing the Fifth Kondratieff Upswing. The report of the Brandt Commission, North-South, devoted several chapters to this theme; although these elements in the report were overwhelmed in its public impact by an overriding plea for a massive transfer of resources from north to south on the dubious grounds that the north lacked adequate investment opportunities to achieve full employment. The report of the Herrera Commission, appointed by the Secretary General of the Organization of American States (OAS) to define areas for economic cooperation in the Western Hemisphere, isolated agriculture, energy, raw materials, and certain environmental problems among its seven priority tasks. The Association of Southeast Asian Nations (ASEAN) has defined energy and agriculture as the two top priority areas for joint action. Indeed, at Cancun, in a little noted intervention, President Reagan showed an awareness of the need to move in this direction. Among the five principles he set out to guide North-South economic relations, he included the following as his third point: "Guiding our assistance towards the development of self-sustaining productive activities, particularly in food and energy." Unfortunately, neither his colleagues at Cancun nor his own administration has pursued this insight seriously and systematically.

These problems are, in fact, endemic and not confined to the non-communist world. Any analysis of the problems and prospects for the Soviet Union and the Peoples Republic of China over the next generation would have to include energy and agriculture high on the list of priority tasks. (A recent visitor to Austin from the PRC and I chuckled when, having surveyed the major economic problems confronted by his country over the next generation, we found the list almost identical to that generated by the Texas Commission on the Year 2000: energy, water, agricultural productivity, transport, and a radical enlargement in R&D capacity.)

A sustained North-South effort to come to grips with this array of resource-related problems should, in my view, have the following essential characteristics.

1. The enterprise should be conducted primarily on a regional basis. The ultimate task is to examine sectoral investment requirements looking a decade or more ahead, and isolating projects to be financed domestically or with foreign private or official resources. This kind of

technical activity does not lend itself to global gatherings which now involve anywhere up to 150 governmental representatives.

2. The regional groups might center, in the Western Hemisphere, around the OAS and the Inter-American Development Bank (IDB); in Africa, around the African Development Bank (ADB) and the Economic Commission for Africa (ECA); in the Pacific Basin, around the Asian Development Bank (ADB). The World Bank would participate in all the regional enterprises as well as relevant global organizations; for example, the Food and Agriculture Organization (FAO). The U.S., Western Europe, and Japan would also participate in the three regional ventures; although their degree of involvement might vary with their respective regional interests. India and China might well prefer, because of their size, to deal with this array of problems via the World Bank (and the kind of consortium arrangements the World Bank has managed) rather than in multilateral committees.

3. The participants would, evidently, have to consist primarily of officials who bear serious responsibility domestically for policy towards the sectors under examination.

Where appropriate, governments may wish to engage persons from their private sectors in the process.

The setting in motion of a concerted North-South effort to enlarge investment, domestic and foreign, in these resource-related fields obviously does not constitute a complete economic policy relating the advanced industrial to the developing countries. The over-riding responsibility of the

North to the South (as well as to the citizens of the North) is to regain a high regular growth rate with inflation under reliable control. Without this condition, the debt-rollovers of 1982-1983 are likely to buy only a little time before new, dangerous financial crises again emerge. If that condition is satisfied, the foreign exchange earning capacity of the developing countries will increase, their debt burdens will become manageable, and protectionist pressures will subside.

In addition, there is the common task of diffusing the potentialities of the Fourth Industrial Revolution to the developing regions. A good many of the new technologies are already relevant to their economies, and more will become so.

There is also a series of problems faced by some of the smaller countries in the world -- notably, in Africa, the Caribbean, and Central America -- where foreign aid subsidies are required if they are not to continue to retrogress with grave human, social, political, and, quite possibly, strategic consequences. The problems of these smaller countries are not all alike. In some, the problems are starkly Malthusian; that is, acute pressure of population increase against agricultural sectors of low productivity. In others, high oil import prices and low growth in the advanced industrial countries have cut their foreign exchange availabilities and thus their capacity to sustain themselves. They generally lack the resilience to make effective adjustments to their straitened circumstances. I believe that, for converging reasons of morality and self-interest, the world community must accept responsibility in such cases; and the fact is that, despite domestic vicissitudes, the advanced industrial countries and the multilateral institutions have recognized this array of welfare problems and done a good deal to ameliorate them. Meanwhile, as time is bought, longer term solutions should be sought which, notably in Africa, the Caribbean, and Central America, are likely to take the form of more effective sub-regional economic associations.

But, as the developing countries confront a generation of maximum pressure of population increase on food and other resources, a time when a good many of them have come to the stage when they are also capable of a rapid absorption of technologies and rapid growth, a North-South partnership centered on the critical resource sectors appears the natural centerpiece in a relationship of growing mutual interdependence.

### E. Rebuilding the Nation's Infrastructure.

Although a consciousness that we have been running down the nation's infrastructure and living off capital [illegible] has been growing, the scale and character of the problem justifies the following extended quotation from America in Ruins by Pat Choate and Susan Walter[*] as well as a close examination of Chart 10 and the statistics in Table 6.

> "Despite a number of recent analyses, the precise condition of the nation's public works inventory - and the future investments we face - remains unknown. While comprehensive and reliable information is still lacking, the partial information that is available paints a disturbing picture:
>
> "The nation's 42,500-mile Interstate Highway System, only now approaching completion, is deteriorating at a rate requiring reconstruction of 2,000 miles of road per year. Because adequate funding for rehabilitation and reconstruction was not forthcoming in the late 1970s over 8,000 miles of this system and 13 percent of its bridges are now beyond their designed service life and must

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[*] Pat Choate and Susan Walter, America in Ruins: Beyond the Public Works Pork Barrel, Washington, D.C.: The Council of State Planning Agencies, 1981, pp. 1-5..

be rebuilt. Although the system constitutes less than one percent of the nation's highways, it handles over 20 percent of all highway traffic. Its further decline will adversely affect the national economy and the well-being of thousands of communities and individual firms.

"The costs of rehabilitation and new construction necessary to maintain existing levels of service on non-urban highways will exceed $700 billion during the 1980s. Even excluding the estimated $75 billion required to complete the unconstructed final 1,500 miles of the Interstate System, the balance required for rehabilitation and reconstruction is still greater than _all_ the public works investments made by _all_ units of government in the 1970s. Since inflation in highway construction has averaged 12.5 percent since 1973 (doubling costs each six years), continuation of present investment levels will permit less than one-third of needs to be met in this decade.

"One of every five bridges in the United States requires either major rehabilitation or reconstruction. The Department of Transportation has estimated the costs of this task to be as high as $33 billion. Yet in Fiscal Year 1981 Federal Highway Authorizations, only $1.3 billion was allocated to repair bridge deficiencies.

"Estimates of the amounts required to rebuild the deteriorating road beds and rolling stock of the railroads of the Northeast and Midwest are not available. While economic necessity may compel reductions in CONRAIL trackage by as much as half, or total reorganization of the system itself, this will not obviate the need for rail modernization. Railroads will play a critical role in national efforts to reduce transportation energy consumption and ship more coal to power plants to replace imported oil. This is a national issue of major importance. A viable eastern rail system is essential to the economic health of the western and southern systems since these regional rail systems can thrive only as part of a national network linking all markets and centers of production.

"No reliable estimates exist of the investments required to modernize our ports, but numerous instances exist of harbor facilities unable to service efficiently world shipping coming to American docks. Vessels in some ports must wait for as long as a month to pick up their cargo.

"The nation's municipal water supply needs will make heavy demands upon capital markets in the 1980s. The 756 urban areas with populations of over 50,000 will require between $75 billion and $110 billion to maintain their urban water systems over the next 20 years. Approximately one-fifth of these communities will face investment shortfalls, even if present water rates are doubled to produce capital for new investment. At least an additional $10-$13 billion beyond that generated by existing user charges will be required.

"Over $25 billion in government funds will be required during the next five years to meet existing water pollution control standards.

"Over $40 billion must be invested in New York City alone over the next nine years to repair, service, and rebuild basic public works facilities that include: 1,000 bridges, two aquaducts, one large water tunnel, several reservoirs, 6,200 miles of paved streets, 6,000 miles of sewers, 6,000 miles of water lines, 6,700 subway cars, 4,500 buses, 25,000 acres of parks, 17 hospitals, 19 city university campuses, 950 schools, 200 libraries, and hundreds of fire houses and police stations. Because of its fiscal condition, New York City will be able to invest only $1.4 billion per year to repair, service, and rebuild these facilities.

"At least $1 billion will be required to rebuild Clevelands basic public works - $250 to $500 million is needed to replace and renovate the publicly-owned water system; over $150 million is required for major repairs of city bridges; and over $340 million must be spent for flood control facilities. In addition to these expenditures, Cleveland must find additional funds to rebuild or resurface 30 percent of its streets, now in a state of advanced deterioration, and to reconstruct the city's sewer collection system, which frequently floods commercial and residential buildings.

"Even fiscally healthy cities face large public works investment requirements. For example, Dallas must raise almost $700 million for investment in water and sewerage treatment systems in the next nine years. More than $109 million must be generated to repair deteriorating city streets.

"Over one-half of the nation's 3,500 jails are over 30 years old. At least 1,300 and perhaps as many as 3,000 of these facilities must be either totally rebuilt or substantially rehabilitated in the 1980s. This construction, in most cases, is court ordered. Thus, it often takes legal precedence over most, if not all, other public capital expenditures.

"Rural facility needs, as yet unknown, are the subject of a major survey by the U.S. Department of Agriculture currently underway.

"Water resource development will require major investments in all regions of the nation in the 1980s. The agricultural base in the old "Dustbowl" will be in jeopardy toward the end of the decade unless new water sources can be developed. After the Second World War, vast underground water resources close to the surface were tapped for irrigation. Today, this area in the Texas and Oklahoma panhandles and surrounding states has over 10 million acres under irrigation (23 percent of the nation's total irrigated farmland). This irrigated producton produces over 40 percent of the nation's processed beef and major portions of wheat, sorghums, and other crops that supply much of America's agricultural exports. The region's water source is being depleted. At present rates it will be gone by the year 2000. The reversion of the region's agricultural production back to low-yield dryland farming would have a devastating effect on the conomics of six states. It would seriously harm the nation's balance of payments and ultimately reduce the value of the dollar in international markets. If this production is to be retained, major public works to bring surplus water from adjacent regions are required.

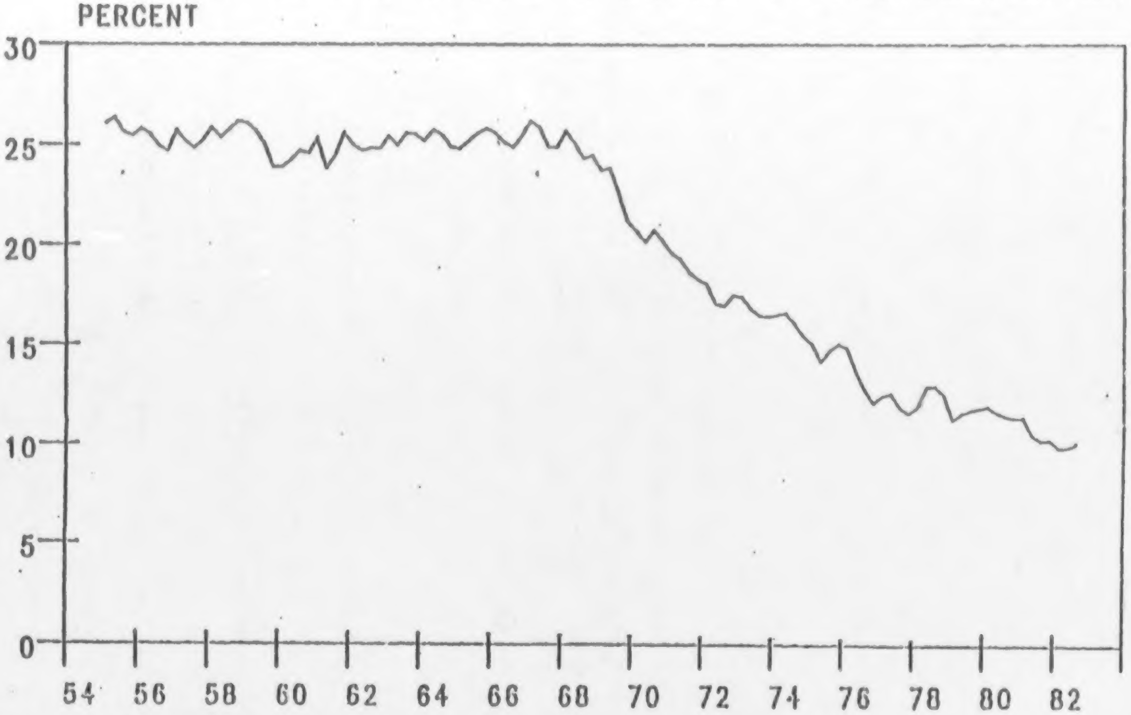
"Even such water 'surplus' areas as New England, Pennsylvania, New Jersey, and New York are in water crises, in part, because of the inadequacies of their water supply, storage, treatment, and distribution systems that become apparent in time of drought.

"A large number of the nation's 43,500 dams require investment to reduce hazardous deficiencies. The Corps of Engineers has already inspected 9,000 of these facilities and found many of them in need of safety improvements. The funds to inspect even the balance of these dams have not been available. A majority of the dams that are potentially hazardous are privately owned and the dam owners lack the financial resources, willingness, or understanding to take remedial measures. Nor do the states have the legislative authority, funds, or trained personnel to conduct their own inspection and remedial efforts.

"These are not isolated or extreme examples. They represent broad trends of decline in both the quantity and quality of virtually every type of public works facilities in the nation. Unless these trends are reversed -- and soon -- the number of public facilities in usable condition will fall to even more dangerous levels."

Chart 10

CONSTRUCTION SPENDING AS PERCENT OF TOTAL STATE & LOCAL PURCHASES, 1955-1982



## TABLE 6

## Total (residential and non-residential) Public Works Investment, Gross and Net, and Depreciation, 1957-1977

(millions of constant 1972 dollars)

| Year | Federal | | | | State and Local | | | | Total Government | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Investment[1] | Depreciation | Depreciation As Percent of Gross Investment | Net Investment | Gross Investment[1] | Depreciation | Depreciation As Percent of Gross Investment | Net Investment | Gross Investment[1] | Depreciation | Depreciation As Percent of Gross Investment | Net Investment |
| 1957 | 3,571 | 5,395 | 151.1 | -1,824 | 20,374 | 8,325 | 40.86 | 12,049 | 23,945 | 13,720 | 57.30 | 10,225 |
| 1958 | 4,364 | 5,039 | 115.5 | -675 | 21,663 | 8,752 | 40.40 | 12,911 | 26,027 | 13,791 | 52.99 | 12,236 |
| 1959 | 3,783 | 4,679 | 123.7 | -896 | 22,081 | 9,128 | 41.34 | 12,953 | 25,864 | 13,807 | 53.38 | 12,057 |
| 1960 | 3,787 | 4,335 | 114.5 | -548 | 22,300 | 9,523 | 42.70 | 12,777 | 26,087 | 13,858 | 53.12 | 12,229 |
| 1961 | 4,424 | 4,058 | 91.7 | 366 | 23,988 | 9,929 | 41.39 | 14,059 | 28,412 | 13,987 | 49.23 | 14,425 |
| 1962 | 4,981 | 3,865 | 77.6 | 1,116 | 24,660 | 10,342 | 41.94 | 14,318 | 29,641 | 14,207 | 47.93 | 15,434 |
| 1963 | 5,784 | 3,963 | 68.5 | 1,821 | 26,799 | 10,780 | 40.23 | 16,019 | 32,583 | 14,743 | 45.25 | 17,840 |
| 1964 | 6,602 | 3,756 | 56.9 | 2,846 | 28,652 | 11,259 | 39.30 | 17,393 | 35,254 | 15,015 | 42.59 | 20,239 |
| 1965 | 6,872 | 3,829 | 55.7 | 3,043 | 30,281 | 11,775 | 38.89 | 18,506 | 37,153 | 15,604 | 42.00 | 21,549 |
| 1966 | 7,040 | 3,949 | 56.1 | 3,091 | 32,422 | 12,327 | 38.02 | 20,095 | 39,462 | 16,276 | 41.24 | 23,186 |
| 1967 | 5,911 | 4,056 | 68.6 | 1,855 | 35,041 | 12,933 | 36.91 | 22,108 | 40,952 | 16,989 | 41.49 | 23,963 |
| 1968 | 4,401 | 4,132 | 93.9 | 269 | 36,944 | 13,608 | 36.83 | 23,336 | 41,345 | 17,740 | 42.91 | 23,605 |
| 1969 | 3,684 | 4,120 | 113.2 | -486 | 34,749 | 14,277 | 41.09 | 20,472 | 38,433 | 18,447 | 48.00 | 19,986 |
| 1970 | 3,716 | 4,189 | 112.7 | -473 | 32,741 | 14,902 | 45.51 | 17,839 | 36,457 | 19,091 | 52.37 | 17,376 |
| 1971 | 3,931 | 4,185 | 106.5 | -254 | 31,882 | 15,510 | 48.65 | 16,372 | 35,813 | 19,695 | 54.99 | 15,538 |
| 1972 | 4,010 | 4,164 | 103.8 | -154 | 31,125 | 16,111 | 51.76 | 15,014 | 35,135 | 20,275 | 57.71 | 14,860 |
| 1973 | 4,128 | 4,138 | 100.2 | -10 | 31,135 | 16,712 | 53.68 | 14,423 | 35,263 | 20,850 | 59.13 | 14,413 |
| 1974 | 3,845 | 4,094 | 106.5 | -249 | 32,147 | 17,335 | 53.92 | 14,812 | 35,992 | 21,429 | 59.54 | 14,563 |
| 1975 | 3,482 | 4,026 | 115.6 | -544 | 30,680 | 17,997 | 58.66 | 12,683 | 34,162 | 22,023 | 64.47 | 12,139 |
| 1976 | 3,765 | 3,954 | 105.0 | -189 | 27,510 | 18,571 | 67.51 | 8,939 | 31,275 | 22,525 | 72.02 | 8,750 |
| 1977 | 4,122 | 3,893 | 94.4 | 229 | 25,826 | 19,076 | 73.86 | 6,750 | 30,037 | 22,969 | 76.47 | 7,068 |

Source: J.C. Musgrave, BEA, special tabulation.

Source: United States Department of Commerce, *A Study of Public Works Investment in the United States*, Washington, D.C., 1980 p. I-63.

No authority of whom I am aware would challenge the broad implications of this account of the disintegration of the physical foundations of our society.

I noted earlier (p.    , above) that estimates of the total investment outlays to rehabilitate and maintain the nation's physical infrastructure over the next decade or fifteen years range from about $650 to $2500 billion. Perhaps a more useful way to grasp the order of magnitude of the problem is this: in 1965 4.1% of GNP was invested in public works; in 1977, 2.3%. An extra 2% of GNP would thus have to be allocated annually to public works to reattain the 1965 level when there was substantial net investment over and above depreciation in physical infrastructures.

Two simple things can be said about this investment requirement -- clearly enormous but not yet firmly measurable. It is most unlikely to be met unless a sustained non-inflationary economic revival occurs which lifts public revenues and narrows greatly the federal deficit; if met, it would set up a requirement for labor in the construction industry and those supplying inputs to that industry that is likely to lift the specter of chronic technological unemployment and increase substantially the demand for steel and some other products of the older basic industries. Clearly, infrastructure investment (along with the diffusion of the new technologies, the rehabilitation of the old basic industries, and enlarged investments, at home and abroad, in resource sectors) should be one of the sectoral pillars of the boom of the 1980's and 1990's. As I trust the analysis incorporated in this book demonstrates, that boom should be rooted in enlarged investment, public and private; and, almost certainly, it will require a higher proportion of GNP invested.

Under those circumstances a good deal of thought ought to be given to how the capital for the enterprise should be raised, priorities set, wastage avoided, infrastructure investments timed to the rhythm of business fluctuations, organization at federal, state, and local levels simplified and, to the degree feasible, co-ordinated. This is not an occasion to summarize and pass judgment on the considerable literature bearing on these matters.

There is reasonably general agreement, however, on a few key points:

- Serious efforts to reduce graft, corruption and wasteful delays in granting and executing public works contracts should be undertaken. Some models of good practice have emerged.

- User (or fee-for-service) charges have potentialities for expanded application and contribute to conservation and reduced waste, notably with respect to water. But, in general, after recent vicissitudes the American public is probably more ready than in the past to regard public services as requiring payment rather than as an occasion for a free ride. User charges also improve access to capital markets guaranteeing, as they do, a flow of revenues.

- Prompt action to reduce the backlog of some $100 billion in public works projects for which federal funds have been appropriated but not used.

- And, more controversial, the creation of a federal capital budget which would permit a gearing of infrastructure outlays to other dimensions of national economic policy as well as the setting of standards for infrastructure investment which might reduce the pork barrel element that has traditionally entered decisions on public works.

* * *

These five major areas where new policies are required constitute supply-side economics in a quite different sense than that phrase has been used in recent years. We require more than a general undifferentiated expansion of investment in the private sector. The state of the American economy and the world economy requires expanded investment in certain particular directions: to support an energy policy at home to assure, on balance, the nation's independence of foreign energy sources; to insulate the nation to the extent possible from other sources of raw materials-push inflation; to supplement the natural vitality of the private sector in unfolding and diffusing the potentialities of the Fourth Industrial Revolution; to assure the viability of the structure of basic industries; to assure the continued momentum of the developing regions (and our exports to them) by helping them provide the resource underpinnings for their continued growth; to rebuild and maintain the nation's now eroding physical infrastructure. This kind of sustained supply side effort appears well within our capabilities; it would surely provide ample opportunities of employment for our working force; and, except for investment in physical infrastructure, it could mainly, but not exclusively, be carried forward by the private sector if an environment of low real interest rates and confidence that inflation was under control were established.

These judgments on the technical characteristics of the tasks ahead bring us, finally, into a terrain beyond conventional economics.

Mr. Rostow. That book, incidentally, Mr. Vice Chairman, addresses itself directly to the fundamental question posed by Congressman Bedell and to which you followed up; namely, is true full employment possible in the United States in the light of the flow of new technology and international competition?

My conclusion is that if we master inflation by means other than severe unemployment and idle capacity, we have more serious investment tasks in the United States than we have members of the working force: Tasks of generating and diffusing the new technologies, rehabilitating the older basic industries, coping with resource shortages and environmental problems both at home and abroad, and if there's any marginal unemployment left in these, we have the monumental task of rebuilding the Nation's degenerating infrastructure.

The argument for this judgment is contained in the background submission.

Now industrial policy. The debate about whether the Federal Government should launch a purposeful industrial policy covers, as you well know, a considerable range of diverse issues.

Some analysts focus rather narrowly on policies which would rehabilitate the older basic industries now feeling acutely the weight of international competition. Among the questions posed in such conventional discussions of industrial policy is whether public subsidies of one kind or another, including loan guarantees and/or tariffs, are required to render them viable.

Other analysts include quite different questions, among them these:

Do the emerging high technology industries require one kind or another of public subsidy to meet the competition of Japan and Western Europe, where the role of the public sector in the development of these industries is greater than in the United States?

Does the emergence of the new high technology sectors, combined with the prospects for the older basic industries, require substantially increased public programs for retraining the labor force?

Does the changing structure of the American economy require significant change in the Nation's educational system from elementary to research university levels?

The scale and allocation of Federal R&D funds, trade promotion, and the regulations governing stock flotations have also been introduced into discussions of industrial policy—all for legitimate reasons.

The approach I take to these and other dimensions of an industrial policy in "The Barbaric Counter-Revolution" is distinctive in a particular respect. I believe the overriding requirement for any industrial policy worthy of the name is to devise a method for controlling inflation by means other than high interest rates, chronic high unemployment, and idle industrial capacity.

At the moment, of course, after 4 years of virtual stagnation, the economy is expanding. But with unemployment still at about 10 percent, and capacity utilization not much above 70 percent, interest rates are already beginning to rise again and the inflation rate edge up. Despite the pain and costs of recent years, we have not devised a stable policy for the control of inflation.

As I say at one point in my book:

**The blunt fact is that the Reagan administration has no other plan to avoid a rising inflation rate than to maintain a kind of Marxist reserve army of the unemployed and the Democrats have offered no authentic alternative that would reconcile rapid, sustained growth with control over inflation.**

Our excessive reliance, since October 1979, on monetary restraint and extraordinarily high real interest rates, which still, I believe, are about 7 percent, to control inflation has hit the automobile, durable consumers goods, and capital goods industries with peculiar force; it has slowed the generation and diffusion of the new technologies, some of which, like robots, are mainly relevant to these older industries; and it has artificially strengthened the dollar, constituting a substantial subsidy to foreign imports, a substantial tariff on U.S. exports.

Contrary to Professor Eads, with that latter point I am emphasizing here the unintended microeffects of misguided macroeconomic policy.

In short, we cannot establish what kind of industrial problem we have and what kind of industrial policy we need until we get capacity utilization up from around 70 percent to a bit short of 90 percent. And this, in turn, requires a different approach to the control over inflation, which would, among other things, get real interest rates down and keep them down.

It is within the framework of that proposition that I am inclined to approach the specific elements others choose to group under the rubric of "an industrial policy."

I turn now, therefore, to summarize tersely what I have to say about the reconciliation of rapid growth with control over inflation. In a more conventional way, I shall then indicate some specific areas where I believe public policy designed to strengthen our industrial performance may well be justified.

My first, most basic, and most controversial recommendation is that we require a strong, credible, longterm incomes policy to supplement fiscal and monetary policy and other familiar measures to get inflation under control and keep it under control. Since something like 70 percent of the costs in the U.S. economy are labor costs, a gearing of average wage to average productivity increases would thus provide a base of confidence that, at last, we as a society had essentially mastered the problem of inflation. Under those circumstances, no serious central banker, including Mr. Volcker, would hesitate radically to reduce interest rates and unleash the boom which it has taken considerable perverse skill to prevent over the past several years since the real price of oil began its decline.

It is in the interest of every major group in American society—including labor and business—that this be done. An incomes policy is not a zero-sum game. The vitality of the private sector in Japan, the Federal Republic of Germany, Austria, and Switzerland demonstrates that an incomes policy does not put the private sector into a straitjacket. As for labor, an incomes policy provides lower levels of unemployment, higher rates of increases in real wages, and a position of authentic responsibility in the society.

To take the extremes, in Japan, where an incomes policy has operated successfully for some time, the prime interest rate is 6 percent; the current account balance-of-payments surplus, $9.9 billion; unemployment rate, 2.2 percent; the increase in consumers prices over the past year, 2.4 percent; the rate of increase of money wages over the past year, 5.2 percent. The equivalent figures, as you well know, for the United States are a prime rate of 10.5 percent; a current account deficit caused substantially by that rate and its effect on the dollar, of $8.1 billion; unemployment, 10.1 percent; the annual increase in consumers prices, 3.6 percent; the rate of increase of money wages, 3.9 percent.

The other countries with effective incomes policies all exhibit better performances than the United States, notably with respect to interest rates, although none of them has quite as glamorous a performance as Japan's.

An incomes policy is not easy to install or maintain. If it were easy, it would have been done long ago.

Institutionally, an incomes policy requires that we install arrangements for annual wage bargaining at the national level, where the common requirement of avoiding inflation is there on the table, to replace the fragmented sectoral wage negotiations that have emerged out of our history. In current negotiations, the rate of inflation is taken essentially as an exogenous variable, sometimes institutionalized in corrosive cost-of-living adjustments, beyond the negotiator's control or responsibility.

Out of our history, we have inherited a system of industry-by-industry negotiations conducted at different times, usually yielding multiyear contracts. The importance of these institutional facts in maintaining the momentum of inflation is universally recognized. For example, both the final 1981 Economic Report to the Congress of the Carter administration and the 1982 first Economic Report of the Reagan administration discussed the inflationary role of these institutional procedures. But neither proposed remedy.

Our present collective bargaining arrangements which frustrate an expression of the common interest did not come down from a mountain in marble like the Ten Commandments. They are not written into the Constitution. They are not governed by rules of free competitive markets. They are quasi-monopolistic negotiations which emerged from a complex political and social history, reaching back a half century, if one takes the NRA as a benchmark, a century if one starts with the origins of a serious American labor union movement organized on an industry-by-industry basis.

The simple fact is that the negotiation of wages, industry by industry, at different times, often covering periods up to 3 years, no longer serves the Nation's interest or labor's. We need a system which automatically brings into play the common interest in avoiding inflation, an interest screened out by the system history has given us.

In this short statement, I cannot go into how, realistically, an incomes policy might be introduced in the context of American institutions and political life. But you will find a quite detailed statement addressed to that problem in my supplementary submission.

Before moving on, I would only add a word about the Federal deficit. I believe we require an incomes policy if we are to enjoy a powerful, sustained expansion in the 1980's and 1990's, that the pent-up investment requirements in our economy make such an expansion possible and, indeed, necessary, and that such an expansion would rapidly narrow the present grotesque Federal deficit, about 60 percent of which is a product of the recession.

It could be more, incidentally, if we set full employment standards higher than the 6, 7 percent which, unfortunately, has become conventional.

Indeed, once well underway, with unemployment rates falling and capacity utilization rising, a tax increase might well be required not only to eliminate the structural element in the deficit, but also to prevent the emergence of demand-pull inflation.

I turn now to some brief observations on more conventional aspects of an industrial policy. By itself, an industrial policy cannot break us out of the catch-22 trap into which we have fallen; but I believe it's an essential supplement to a policy of high, steady, noninflationary growth.

First, the older basic industries.

I doubt that the automobile, steel, machine tool, and certain other hard-pressed, older industries will again play the role of leading sectors in American growth. In fact, their rates of growth have generally been less than the average for manufacturing for several decades. On the other hand, I do not for one moment believe they are doomed to wither as we come to depend on imports from Japan and the new industrial countries.

The deep recession and an overvalued dollar, both caused by an excessive reliance on monetary policy, have been much more damaging to them in recent years than foreign competition. Nevertheless, it's clear that, even in an environment of sustained prosperity, they require the vigorous introduction of new technologies and large outlays to modernize their capital stock.

Two basic conditions should be satisfied before loan guarantees or other public subsidies should be granted. First, we need management which exhibits a capacity to understand and deal with the new technologies. Management in the older, basic industries in the past generation was notably slow in exploiting the potentialities of the flow of inventions emerging from the R&D process. A new breed of industrial leaders will be required in these industries if robots, new industrial materials, like ceramics, and other products of the technological revolution now underway are to be promptly and efficiently put to work. A decade from now, the older, basic industries should be high-tech industries, with all that that implies for the peace of innovation within them and the character of management.

Second, the rehabilitation of the older industries requires an authentic sense of partnership between management and labor. Purposeful leadership on both sides will be required, as well as new attitudes toward each other and the common task they face.

If the three conditions I have specified were satisfied—a setting of sustained expansion, vigorous innovational entrepreneurship, and close management-labor cooperation—it might prove to be the case that private capital markets would be willing to take the risks of financing the massive reequipment that the basic industries evidently require. But the estimated orders of magnitude are large; and it is wholly possible that loans or loan guarantees by some new version of the RFC might be necessary and, in the end, highly profitable to the society.

To avoid the emergence of white elephants requiring one form or another of corrosive, protracted public subsidy, the administrator of the new RFC would have to be in his time as hardheaded and demanding as Jesse Jones was a half century earlier.

We turn now to the generation and diffusion of the new technologies, which I group under the heading of the Fourth Industrial Revolution in my book.

Clearly, the fate of the U.S. economy on the world scene over the next decade and, as I have just pointed out, the fate of the basic industries, will depend substantially on how well we perform in the international race now underway in microcomputers, communications, robots, lasers, genetics, and the new industrial materials.

The character of the new technologies is such that their generation and diffusion can be left primarily in the hands of the private sector. But my background submission specifies a series of supplementary, supporting functions where public policy could be useful. For example, in financing expensive and high risk but, potentially, high pay off R&D projects; a wide-ranging set of tasks in education at all levels; infrastructure investments that would accelerate the diffusion of new communications technology.

I might pause, Mr. Vice Chairman, coming as I do from Austin, Tex., and remind you how, in a fit, not of absent-mindedness, but of putting ideology aside, Austin and the three other cities that competed for the location of MCC behaved. It was a marvelous example of our good sense when we set ideology aside.

The other cities, all of which, I'm sure, would have served MCC well—it was a very close race—did roughly what we did. We got the Governor, we got the mayor, we got the leaders in the private sector, we got the banks, we got the real estate people, we got the University of Texas at Austin, we got Texas A&M and, most marvelously of all, Texas A&M and UT collaborated, and we made a team.

We worked and asked ourselves the question—what can we do, not merely to attract it, but to support this fundamental high-tech effort in this country?

I often think that we forget, in the midst of our ideological debates about the private sector and the public sector and the virtues and faults of both, that we have a deep, hidden asset in our country, which is the capacity, when we face a problem like rebuilding a city or buying time for New York or putting a man on the Moon, to put together a partnership of the public and private sector, which, in fact, has been operating, let's say, since the Cumberland Road was built and the Erie Canal by the New York State Legislature.

As for retraining the existing work force, I would argue that this is most efficiently done by the firms involved. Historically, without question, the factory has been the best vocational school. Nevertheless, public policy might offer some tax incentives to accelerate this process; and, depending on the character of the retraining required, there may be a supplementary role for retraining in public institutions.

As you will see, my background submission covers aspects of public policy that bear more obliquely on the state of American industry; for example, policy toward energy and other basic resources and the urgent need to rebuild the Nation's rapidly obsolescing infrastructure, which, incidentally, would greatly increase the demand for steel and other products of the basic industries.

But it would be fair to say that my central theme today is that the minimum essential requirement for a serious industrial policy in our country is to create a method for controlling inflation—including an incomes policy—which would get real interest rates down and keep them down.

Without an environment of rapid, sustained, noninflationary growth, an industrial policy will be dragging a heavy anchor and is likely to yield disappointing results, as in Great Britain. In an environment of sustained, noninflationary growth, an industrial policy, on a highly selective basis, can play an important supplementary role.

Representative HAMILTON. Thank you very much, Mr. Rostow.

Mr. Eisner, we welcome you back to the Joint Economic Committee. We look forward to your statement.

## STATEMENT OF ROBERT EISNER, WILLIAM R. KENAN PROFESSOR OF ECONOMICS, NORTHWESTERN UNIVERSITY, EVANSTON, ILL.

Mr. EISNER. Thank you very much, Mr. Vice Chairman. It's a great pleasure to be here again.

I'll submit my prepared statement for the record and beyond the first sentence or two will depart from it considerably in a quite reduced version.

One of the myths propagated on the body politic in recent years has been that monetary and fiscal policies can no longer be used to promote economic growth and prosperity. Those who have never approved of Government policies to guarantee adequate aggregate demand have been joined by new doubters who see insuperable obstacles in inflation and issues of long-run supply.

I'd like to begin by indicating that the major task of restoring our economy to prosperity and to ample growth must rest with monetary and fiscal policy. We have, unfortunately, suffered from inadequate and misguided policies in recent years. It is these rather than the inherent failure of all monetary and fiscal policy which have prevented the successes we have wanted. Monetary and fiscal policy do have limitations and I have expressed them at various places, including the fine collection of papers that the Joint Economic Committee put together a couple of years ago. But we have not had the monetary and fiscal policies that people with some understanding of them might well have advocated. We have had a tight money policy which, as the other witnesses have indicated, has contributed mightily to the recession we've had and the very substantial unemployment.

I would like, however, to add something perhaps a bit new to many people, the notion that, contrary to general belief, our fiscal policy as well has been tight. If we see that appropriately, we may recognize also the nature of the danger of inflation which, in many ways, I think has been miscast.

We have had inflation, over now much of a decade which has been related essentially to supply side problems, essentially to the supply shocks of the huge increases in petroleum prices, in prices of raw materials throughout the world and in world markets.

The response to these has then been an inflation which we have tried to crush inadvertently or advertently by reducing total demand. The result, of course, has been the unemployment and ultimately, a decline in prices. But much of the decline in prices has to be attributed to the slackening of the supply pressures.

What has happened on fiscal policy is that we have thought we have had an easy fiscal policy because we see deficits growing. Even by the measure of the high employment budget we see the deficit growing. We forget in this context what many people tell us—there is a so-called inflation tax. The notion that deficits are expansionary really relates in economic principle to the notion that when the Government runs a deficit, for example, of $200 billion, the public gains in assets of Government debt $200 billion, which it then finds is a resource for further spending.

However, if you have an inflation rate of 10 percent and you have a debt of $1 trillion, the existing value of the Government debt goes down by 10 percent of this trillion or $100 billion.

So, the true deficit corrected for inflation, corrected for the inflation tax, corrected for the amount that the holders of Government debt are losing on their debt, turns out to be considerably less.

Now what that suggests is that we have had this recession because we had an inflation which we then met by a combination of tight fiscal and monetary policies. There are ways to combat inflation which don't relate to this. It is also true, I think, that an inflation which is induced by supply side shocks can best be dissipated either by allowing those shocks to take their course or by other measures.

I might just add a final word on this before proceeding more directly to industrial policies, and that is that the notion that the deficits have been quite mismeasured and exaggerated until now does not necessarily mean that the very high anticipated future deficits are no problem. If you are anticipating a deficit of 4 or 5 percent of GNP in 1988, as we are anticipating, and at that time we're also not anticipating high inflation and rising interest rates, you then are anticipating a deficit that cannot be eliminated by inflation corrections. And those deficits, by appropriate measurement, are going to cause misallocations and distortions.

Now, approaching industrial policy, which has some exaggerated support because of a failure to recognize a task that aggregate macroeconomic policy has to attain for a prosperous economy, we should look for certain basic principles. These are principles which relate to where and how Government should intervene.

There is one basic place that Government has to intervene, and that is to provide a full employment aggregate demand and thus a context in which private business can flourish. And there is, unfortunately, in our economy, even under perfect competition, a well-documented tendency for there to be inadequate aggregate demand and for unemployment to develop.

Therefore, the Government has recognized a role for 30, 40 years of intervention, a role which, unfortunately, I think, certain recent policies have abdicated. If you abdicate that role, you're going to be in deep trouble.

What should be the principles in general, or criteria, for Government intervention, whether what we call industrial policies or anything else? These criteria, given the kind of economy to which we are committed and what we know can be achieved through a market, must be market breakdown.

Where would you get market breakdown that would warrant Government intervention? Obviously, if you don't have perfect competition, if you have substantial imperfections of competition, either because of the nature of industry—certain industries where it's very difficult for many suppliers to operate—or because of Government policies or regulation which have promoted monopolistic, imperfect competition, you may want some intervention to change this, or at least to control the situation.

You may also have rigidities. You may have prices and wages that do not move rapidly. You may have, related to that, immobilities in a situation where workers are in one area and are not going to move, even though conditions change.

We come next to something of very considerable significance and that is risk. We tend to be risk-averse, I think for good reason. If there is a difference between private risk and public risk, there may be a particular role for Government action. Economists would also talk about externalities. That is a situation where the results of an action by an individual firm or an individual go beyond the transactions or the behavior of that individual or firm, so that there are benefits to society or costs to society. The obvious case in point on costs is a factory putting out smoke which it doesn't pay for, polluting the general atmosphere. But there may also well be positive externalities, where the benefits to the individual or to the firm go far beyond the particular activities in which it seems to be engaged.

And finally, we may well have had Government interventions which are distorting the economy and we feel, then, there is some need to correct for them, although I might say the obvious way to correct for them is to eliminate those interventions.

Among the major interventions that we have had in addition to tariffs, quotas, price supports, all kinds of restrictions on trade, particularly international, but also through the regulatory process, are the kinds of tax interventions that Mr. Eads has referred to a bit earlier, and I do think he appropriately reminds us that this relates very closely to the paper entrepreneurship that Reich, for example, speaks of.

We have, through perhaps well intentioned interventions, through the whole maze of tax preferences and tax incentives and the complicated tax structure, given businesses incentives to try to maximize tax advantage, to set up all kinds of mergers, acquisitions, dummy corporations, partnerships, in order to benefit from tax provisions, rather than necessarily to earn a profit by production and by more efficient production.

Indeed, on the matter of the uneven impacts of tax incentives, particularly for investment, I might submit for the record a recent article I had with Steven Bender on the differential impacts of tax incentives for investment, which would show, for example, how the ACRS—the accelerated cost recovery system—and associated changes, create a situation where the Government, far beyond merely reducing taxes, is actually creating negative taxes for investment in many kinds of capital and for many firms and industries.

Now as we try to apply these principles for Government intervention, I think the most important thing to recognize is that here is a huge role for investment in human capital. The free market does not guarantee that we have the optimum amount of investment in the ability, the training, the ability to work of our labor force.

Indeed, rather ironically, precisely because we are not a slave economy, it doesn't pay individual firms to invest adequately in the training, in the ability of their workers. If they take a poor dropout from a ghetto school or a person without any training and with high risk, and they do try to make him into a productive worker, and invest in the time and the training necessary, they have no guarantee that they can keep this worker. The worker, once trained, if he is a success, or she is a success, can well go elsewhere. That suggests a major role, then, for the body politic, for the public, through Government or through tax incentives. But it may well best be done through direct Government activity to see to it that we have the education, that we have the training, that we have the human capital which is the prime prerequisite for any substantial productivity improvement or growth.

That moves us into the whole broad area of public investment, of creating our infrastructure, of all that we would need in the way of providing a situation where individual firms can go ahead. Unfortunately, there has been a widespread view in the land that private investment is what counts and public investment is a waste. In fact, a great deal of our investment is public investment. I think it's interesting simply to look at the area of transportation and ask whether we are really better off having more planes which are privately owned and less adequate terminal facilities, which are publicly owned, more trucks and fewer highways, more trucks and interstate highway bridges that collapse.

Indeed, is there really a distinction between an automobile which is owned by a corporation, by Hertz or Avis which classifies as investment, or an automobile owned by a government body or an automobile owned by an individual household? They all provide transportation services.

As we look to the kind of Government intervention we might find acceptable and desirable, I think the problem of the transition from school to job is a major one. We can't, as I suggest, leave indefinitely to the anarchy of the streets the possibility of getting jobs for kids that go to school, that drop out of high school, that finish high school. We cannot say, well, somehow they'll find something, because many of them don't find jobs promptly and the unemployment, the lack of employment that we have is not just a temporary cost; it represents a cost to society in the years to come.

Another major area of Government intervention would be to provide knowledge, to provide research and development. I have been studying the tax incentives for research and development. That is one possible way to go. But I have to express a skepticism out of a lot of work with investment as to whether you can readily devise tax incentives that get the job done.

It may be that the more appropriate model on research and development is essentially what has been done in agriculture, or what has been done in defense where research and development is largely simply done by the Government, although perhaps there's some way of working out a joint effort between Government and industry, particularly on applied research.

Now as we go beyond these general measures which you might classify as industrial policy, and where people like Reich and others who have thought about it recognize again, along with appropriate macroeconomic policy, are an essential for renewed growth and a return to prosperity, we can wonder about the specific policies that people say would build up high growth industries, do something about declining basic industries, do something about competition, international competitiveness.

Here, I think, there are confusions and there are dangers to which we have to be alert.

You know, who can outguess the market? If you have an industry which you say is a high growth industry, you or I say, or economists who study it pay, do we or they know something that private investors don't know? And if not, why would we expect private investors to be pouring into these high growth industries? Is there then some special role for Government?

Before we assume there is, we would want to examine our principles. Is there a difference between private and public risk? Are there externalities? Are there imperfections?

It may be that there is a lack of trained manpower. Maybe you don't have people with mathematical training, for example, and that may be because they're not getting mathematical training in the schools. At the risk of offending somebody, I might suggest that we don't need prayers in the schools and I don't think that prayers for the schools are going to do the job. We're really going to have to invest some resources in improving our educational system.

But, beyond that. I think there are dangers in trying to outguess the market and decide that this industry, somehow we know better than the market, should be favored.

The same thing in a way goes for basic industries. I join with Professor Rostow in agreeing that I don't think the basic industries are going to collapse. I think there will be a place for our automobile industry and our steel industry. I think if we get out of the notion of trying to protect them against foreign competition, they will be forced to restructure themselves in more efficient ways, as, to some extent, they are apparently doing, become leaner, harder. They would perhaps not have as high rates of remuneration, including wages, as you can expect in a sheltered industry, sheltered from competition because of its originally monopolistic character, or sheltered from foreign competition by trigger prices or tariffs or quotas or the like, or domestic labor content provisions. You can have these basic industries proceeding.

I would not, however, suggest that I think the Government should be pouring resources into them. I confess to having been, certainly to put it mildly, less than enthusiastic about the Chrysler bailout. But to put it positively, I think the Government did play a useful role there in offering the impetus for a restructuring or pressures to make them more competitive which has played a great role in moving them ahead. And we should recognize that there was a difference between private and social risk, between private and social cost, which could have been used as an argument in favor of that particular intervention.

We hear a great deal about competition in world markets, and the U.S. economy has become less competitive. It's a useful experience for many of us to go abroad and hear all the foreigners complaining about their trouble competing with the United States and how we're dominating them.

The fact is, of course, that competition is a two-way street. Trade is a two-way street. If we're going to have exports, we have to have imports. Look at many of our industries—you take our computer industry. You take Hollywood. You take Boeing and aircraft. If we're not dominating the world, we're having a major role in trade in our exports.

It's not readily recognized and I guess you have a hard time as political leaders getting it through the public. But every time you take an action to protect some industry at home—because our steel industry can't compete with the foreigners or our automobile industry can't—you're hurting somebody else.

If you protect the steel industry, for example, and have higher steel prices, rather obviously, you're going to force higher costs on our automobile industry and make it harder for them to compete.

But even in a more basic sense, particularly with floating exchange rates, any time we restrict imports, we tend to make the dollar value higher. We raise the relative price of the dollar. If the dollar becomes valued more highly, that tends to hurt our exports. It hurts the farmers. It hurts IBM. It hurts Boeing. It hurts everybody trying to sell abroad and, indeed, as the dollar becomes more highly valued, it makes other imports cheaper for domestic purchase.

So our acts of protecting particular industries may look good to those particular industries, and I must admit it's going to be hard to tell the steelworker, if we protect you, we're hurting the farmer or the automobile worker. If you protect the automobile worker, you're hurting the worker at Boeing or at IBM. But those are the sad facts, I think, that an economist has to keep pointing out.

So we finally, then, get into a situation where the protection of one group will hurt another. There is a danger in the industrial policies being proposed, that we get ourselves into the situation where somebody says, well, you have to promote this, and we don't recognize that promoting this, then, is hurting something else and we may be quite wrong in our guess of what to promote.

I might finally have a word or two on the matter of growth which we hear a great deal about. And here I hope that I don't sound too offbeat. Growth is sort of one of those good words, like motherhood or apple pie. We're all for growth, and why not?

Well, to the extent that growth is costless, of course, why not? And certain kinds of growth are relatively costless and therefore, I think it's a terrible pity that we haven't adopted the measures that will foster those kinds of growth.

And that essentially is the growth that comes from utilizing all of our resources when we're not utilizing them. If we have 10-percent unemployment and reduce it to 5 or 6 percent, you can have one tremendous growth spurt as we get up to the full employment path.

We can also promote growth by making our investment more optimal. That involves avoiding tax incentives that distort the economy into large amounts of investment for payoffs, which are probably negative in the real sense, but which are justified by the tax benefits. But, on the other hand. we should be seeing to it that we have enough public investment, as I've suggested, investment in education, investment in the infrastructure which is necessary for the economy to proceed.

Now beyond that, should we be doing something for growth? Well, beyond that, the only thing that economists can tell you we can do for growth is somehow get people to sacrifice now, to consume less now, to enjoy life less now, in order to be devoting resources to enjoying life more in the future. And here, I would question that Government has any role.

You know, in Stalin's Russia, Stalin decided that that was the role of government, and I have to confess that he may well have been right, because if he hadn't done that at that time, from his standpoint, the Russians might well have been overwhelmed by the Germans or somebody else long before World War II.

But I don't see that kind of a prescription for us—that we somehow in Washington know better how much the economy should grow. And therefore, I say that that is the kind of decision that should be left again to the market. to how much each individual decides he or she wants to save so that his or her grandchildren should live better than he's living.

And therefore, I would not have the Government tampering and saying, you have to save more. We'll give you a special tax incentive for saving. We have to have more capital accumulation. We'll give business a special tax incentive to acquire factories that will somehow produce things that our grandchildren will want in the future.

As a matter of fact, you may well misguess and the factories that you give the tax incentives to produce now may well turn out to be white elephants in the future, in any event.

Well, let me perhaps close by just answering, as I have in the statement, the various questions indicated in the letter from the chairman. I might close by reading my answers to the following questions. What are the economic and political risks in implementing industrial policies?

My answer is in industrial policies aimed at providing a full employment framework. An appropriate infrastructure of public and human capital may be expected to have a high payoff. Political risks may relate to a failure to persuade the public of the fundamental, principled nature of such a role for Government, which is not squandering public resources, which is not giving away things in the way of Government handouts.

Special and specific industrial policies of favoring one industry over another without a basic rationale for Government imposing itself on the market run the economic risk of costly misallocation of resources and the political risk of putting Government at the service of persuasive special interests, thus squandering the public wealth of all for the private gain of some.

I thank you.

[The prepared statement of Mr. Eisner, together with an article submitted for the record, follows:]

## PREPARED STATEMENT OF ROBERT EISNER*

One of the myths propagated on the body politic in recent years has been that monetary and fiscal policies can no longer be used to promote economic growth and prosperity. Those who never approved of government policies to guarantee adequate aggregate demand have been joined by new doubters who see insuperable obstacles in inflation and in issues of long-run supply. It is variously argued that monetary policy, at least in the long run, affects only prices and inflation and not real output and growth, and that fiscal policies affect only the mix of output as between public and private use and as between consumption and capital accumulation. It is further argued that expansionary policies aimed at high employment and growth quickly create unacceptable inflation and that long periods of substantial unemployment, in excess of any previously experienced since the Great Depression of the 1930's, must be tolerated to hold inflation in check.

We have been told that the essential problems of our economy are structural and long-term. They are not susceptible to the "quick fix" of countercyclical monetary and fiscal policy. They require rather measures to promote supply, productivity and international competitiveness. And here there are two substantially divergent programs: 1) change the tax and transfer structure to lower taxes related to saving and investment and to raise other taxes and reduce transfers, such as for social security and welfare, so as to reduce consumption; 2) develop an activist set of industrial policies to promote general growth and to channel resources to specific industries deemed likely to contribute more to increasing productivity, international competitiveness and economic growth.

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## I. Monetary and Fiscal Policies

Whatever the adequacy of monetary and fiscal policies alone, neither sustained long-run economic growth nor even reasonably full recovery from the 1981-82 recession can escape their constraint. The fact is that we apply monetary and fiscal policies to the economy, oft with a vengeance, whether we profess to do so or not. A presumably steady growth of "the money supply," in reality quite difficult to attain, may prove seriously contractionary in the face of supply shocks in energy or other non-monetary factors. And programs to cut or raise government expenditures, whether to get government off our backs or to put guns on them, inevitably have effects on the level of economic activity as well as, frequently, inflation and interest rates.

Sensible monetary and fiscal policies will not solve all of our problems but they will contribute in a major way to a growing, high-employment economy. Unfortunately, we have practiced such policies to a decreasing extent in recent years. Monetary policy, far from aiding the economy, was largely trapped in a monetarist ideological mold which ignored credit conditions, interest rates and real needs of the economy. In an ill-conceived effort to combat inflation, it contributed significantly to bringing the major measure of overall unemployment to new post-depression highs approaching 11 percent, and bringing broader measures to 15 percent and above.

Fiscal policy, contrary to widely held belief, was in fact also contractionary. Indeed, the official high-employment budget, a partial measure of fiscal thrust, moved from a deficit equal to 1.88 percent of gross national product in 1975 to a surplus of 0.15 percent of gross national product by 1981.

But actually this tells only part of the story. Inflation plays many tricks on conventional accounting, and on government budgets as well. For with inflation the real value of outstanding government debt declines and, as expected inflation drives interest rates up, the real market value of outstanding debt declines further. The deficit then consists in large part of inflated nominal interest payments which do not add to the real private income stream but merely compensate holders of government debt for the real capital losses which they suffer. In a paper with Paul J. Pieper, I have pointed out that the high-employment budget with proper adjustments for this "inflation tax" was actually in substantial surplus for each of the years from 1977 to 1981 and that this surplus was closely associated with declines in real growth and the increases in unemployment which reached their peak at the end of 1982.

The lesson then is not that monetary and fiscal policy do not work but that if by design or inadvertence we follow unwise monetary and fiscal policies we create considerable damage.

For the future, we should aim at monetary and fiscal policies which provide adequate aggregate demand for sustained long-term economic growth with a minimum of distortions. For monetary policy, this implies providing sufficient reserves to depository institutions so that the various relevant measures of the money supply can grow sufficiently to provide the low nominal and real interest rates consistent with high employment, optimal investment and minimum inflation. We should by no means, however, use restrictive monetary policy to curb inflation by means of a recession.

While fiscal policy in the past has been restrictive, it is now veering in a sharply expansionary direction. Widespread alarms are not appropriate for the current situation, however, as stimulus is well in order with officially measured unemployment still around 10 percent of the labor force.

The so-called "out years" are another matter. By current projections, the high-employment budget will be in deficit by over four percent of gross national product by 1988. Even the more appropriately defined adjusted high-employment budget, taking into account inflation effects, would be in deficit by over 2.5 percent of GNP.

Such deficits are unsustainable. They would in fact inevitably create high inflation and high interest rates which would contribute to substantial distortions in the economy. To the extent that they relate to larger shares of goods and services going to the military, they will imply lesser shares for either investment or consumption or both, unless foreigners can be persuaded to finance our expanded defense program.

## II. Industrial Policies Broadly Conceived

The need perceived for "industrial policies" should properly stem from inadequacies in market performance. These may relate to imperfections of competition, rigidities and lack of mobility, risk aversion combined with an inability to pool individual risks to bring them down to social risk, "externalities" such that individuals and firms do not take into account benefits or losses to others, and government interference in terms of existing taxes, subsidies and regulations which have distorted market results.

In the last instance cited, the ideal remedy is not new industrial policies but removal of the distortions which government has produced already. This may well be easier said than done but candor and clarity require that we face the underlying problem. The pressures of a wide variety of special interests have been all too successful in loading down our economic system with a set of "industrial policies" which reduce economic welfare in the aggregate. The beginning of any sensible industrial policy should be the elimination of the multitude of "tax incentives," price supports, tariffs, import quotas and all manner of government intervention, state, local and federal, which have hobbled our economic system.

All of this is not to say that we can have a perfectly "free market" or that such a free market would be perfect or even optimal. It is to say that intervention by government should be based on a clear set of principles, along the lines of those enunciated above, and that intervention that does not fit those criteria, or other, distributional principles, should be eschewed.

The justification for intervention by way of general monetary and fiscal policies aimed at providing a level of aggregate demand consistent with high employment stems from the correct perception, since the years of the Great Depression of the thirties, that modern developed economies may frequently for long periods, if not indefinitely, waste large quantities of labor and other productive resources because of inadequate effective purchasing power.

Looking at the longer run, we can distinguish major deficiencies on the supply side which call for public intervention. These relate essentially to the area of labor and, more generally, human capital. Ironically, because we are not a slave economy, it does not pay business to invest in the general ability, education and capital of its workers. Because capital markets are imperfect, restricted by costs of information, transactions and repayment as well as lenders' and borrowers' risk, individuals tend to underinvest in themselves. Neither an infant's ghetto parents nor an untrained teenager can go to a bank and ask for the capital to develop a highly productive worker. The gains to society are on balance high. The gains to the individual are uncertain, and secure means of repayment for private loans unavailable.

It is in the whole area of labor markets and labor productivity that the needs for enlightened public policy are greatest. We can ill afford further deterioration of the educational system which must be the foundation of a productive labor force. School prayers will not reverse our slump.

We must also establish new ties of education to jobs. We cannot rely upon the anarchy of the streets to bridge the gap from school dropout to productive worker. Programs of subsidized training and incentives to employers are called for to bring our nation's youth, now and in the future, quickly into the mainstream of economic activity.

Indeed, unemployment of all kinds, but probably of youth in particular, generates a future burden which far outweighs its current waste. Job experience and training currently forgone generate less productive or idle workers for years in the future. Top priority should be given to a combination of incentives to private employers along with public training and public employment to insure the full utilization of our human resources.

Beyond the development of human capital should be the encouragement of incentives to workers to utilize their skills at maximum efficiency. Job security should be a largely guaranteed reward for good performance. Enlarged employee participation in ownership should be encouraged to enhance workers' sense of identification with the fruits of their own labor.

There are other areas of direct role for government, in furthering public and private health and in encouraging the research and development and technical advances which are beyond the immediate capacity or self-interest of individual firms and yet clearly in the social interest. It is not clear, I may add, that tax incentives to private industry are the best way to proceed in this area. For one thing, partly because the "tax incentive" route has already been so heavily trampled, very large numbers of firms do not have the current tax liabilities that would make new incentives valuable or effective. For another, though, it is difficult to devise cost-effective incentives; windfalls to firms and individuals for what they would do anyway are the likely outcome, with little bang for the lost Treasury buck. Thus, it may prove necessary, if we are to expand R&D in productive fashion, to involve government directly, as has been done in agriculture and defense.

## III. Specific Industrial Policies

Should government go further in offering specific direction to the economy? Should we have "industrial policies" which channel resources to particular industries? Here I would counsel some caution.

The market is far from perfect. But who can be confident that he can out-guess it? If policymakers think to see an industry with great potential but short of resources, they would do well to try to ascertain why private investors are not rushing in. If the potential is really there, would not profit-seekers find it? What can the public policy-makers see that the private investor has not seen?

Here we have to come back to first principles. Perhaps individual or private risk is too great. But are we sure that the social risk is not also great? Private investors were recently reluctant to push into petroleum substitutes, perhaps because they sensed a risk that real petroleum prices would not remain indefinitely high enough to make such investment worthwhile. But if that was the risk, it was also a social risk and government might well have been leery of sinking huge resources into projects that would come to grief if world petroleum prices collapsed. The world is indeed replete with examples of ill-conceived public projects -- billions of dollars in energy investment in Australia, steel mills in India, and heavy industry in China.

The fact is that, despite the glamour attached to "investment," not all private investment pays off. Construction booms have collapsed in bankruptcies. Large amounts have been invested in the U.S. steel industry with dubious results. But market forces punish and curb unwise private decisions, if not in time, in due course. Mistaken industrial policies, with the much vaster ability of government to commit resources, might bring disaster on a much larger scale.

This is not to say that there is never a major role for government. Private risk may exceed public risk. Externalities may be such that no one private enterprise can see fit to proceed on its own but all may find it profitable to go ahead together if there is a public commitment which brings them all in. Development in the Tennessee Valley is a conspicuous historical example. And certainly public overhead capital may be needed to provide a broadly-defined infrastructure which may span airline terminals, roads, harbors, schools, hospitals, housing, police and fire protection, insurance, all that it takes to bring together a critical mass of qualified labor. It would be wise public policy to focus on creating the public foundation on which private progress can proceed.

As to the choice between "basic" or "high-growth" industries, again we should be guided by basic principles. It would be difficult for a government administrator, or an economist, to find the wisdom to make life and death decisions on American businesses or industries. Can we really know that an industry that has suddenly spurted will continue to spurt? Or may it trip on new hurdles of national or international competition or technological change? I would not have the government pour resources by tax or other subsidies into the American steel industry. And I would certainly not protect it from foreign competition. But I would not argue that this means that the American steel industry is doomed. I would rather suspect that the pressure of competition and the recognition that government handouts are not in prospect would force the management and labor of American steel companies to rebuild a leaner industry where, it would have to be faced, wages and other remuneration would be reduced to levels closer to those in the rest of American industry.

The recent example of Chrysler is instructive. I confess to having been less than enthusiastic about the government "bailout." Yet the combination of government acceptance of risk that private investors rejected and the role of government pressure in bringing about critical adjustments in wage and salary schedules contributed to the remarkable turnabout which we have witnessed. The lesson is that there may be a role for government in channelling resources in particular directions but means must be found to judge appropriately the instances where a unique public contribution, because of a difference between private and public costs and benefits, is warranted.

The issue of "our competitive position in the world economy" is highly confused in public discussion. The "competitiveness" of all of the goods and services of a nation cannot be separated from the question of the rates of exchange for its currency. If government intervention causes a currency to be "overvalued" that country's goods will be expensive to foreigners and foreign goods will appear relatively cheap. Hence export industries and those industries competing with foreign imports will suffer.

Without direct intervention in foreign exchange markets, a restrictive monetary policy in the United States will drive foreigners to invest in American interest-bearing securities. As they supply more foreign currencies to obtain dollars to make these investments the price of the dollar is driven up. It is driven up to the point where the supply and demand of foreign exchange for dollars is again equal, taking into account the repercussions of the decreased foreign demand for U.S. exports, the increase in U.S. imports of foreign goods stemming from their lower relative price in dollars and any decrease in U.S. demand for foreign goods stemming from the slow-down in the U.S. economy generated by the higher interest rates and reduced domestic investment and exports.

Problems relating to such general difficulties of competition in world markets can and should be eliminated at their source, the government-induced appreciation of the dollar because of restrictive monetary policy. International competitiveness joins in the losses attributable to tight money.

Beyond this, comparative advantages undoubtedly change and have been changing substantially in recent years with economic growth in Western Europe, Japan, Korea, Taiwan, Hong Kong and elsewhere. As we lose positions of relative national monopoly in various industries we can expect to be forced and should be forced to accept non-monopolistic returns in these industries and/or move into other industries where our comparative advantage is increasing.

Government should not try to impede such shifts by tariffs, quotas, or other restrictions on foreign trade. To do so may offer transient benefit to some industries at inevitably greater expense to others. If our steel industry is protected, the higher prices paid for steel will not only injure the American automobile industry by raising its costs. The resultant appreciation of the dollar, caused by our reduced demand for foreign exchange to buy foreign goods, will hurt our exporters. Helping the workers of U.S. Steel will thus hurt the workers in IBM and Boeing, and farmers throughout the nation.

But channelling resources to potential export industries may also prove costly to the nation as a whole. After all, we can acquire the goods and services which we enjoy either by producing them ourselves or by trading for them in international markets. Free trade may be expected to guide the allocation of resources to an optimum in which we are producing for ourselves that which we can most efficiently make for ourselves, and producing for export to finance imports of those goods and services we cannot produce most efficiently for ourselves.

Again, we should apply our basic principles and criteria to determine where government intervention is warranted. It is conceivable that there are externalities, greater individual risks than social risks, or immobilities related to lack of information (or lack of initiative) which government can and should help correct in order to promote exports and to encourage the transition of human and other resources from industries which are declining to others with the potential for increase because of changing international comparative advantages. But intervention not supported by our fundamental criteria can only result in special advantages for the few at the expense of the many.

U.S. competitiveness in the broader sense declines where competition is inhibited by government intervention at the behest of one group or another. Price supports or protection for particular industries not only shield them from foreign competition but have inevitable repercussions which reduce the competitiveness of other industries. For in a very basic sense American industries are competing not merely with their counterparts in the rest of the world but among themselves. To curb that competition must inevitably reduce productivity generally.

Sober analysis must thus bring us to the conclusion that industrial policies should not be excluded out of hand but that there are serious economic risks in implementing them. We may well be tempted by arrogance or pressured by special interests into costly efforts to outguess the market. Associated political risks entail the difficulty of settling what should be issues of economic efficiency in the political arena where there are vast opportunities for the "bargain" distribution of public wealth to private interest.

## IV. Economic Growth

As to the broader question of government managing the economic growth process an important distinction should be made between two issues. First, an economy can grow or grow more rapidly by utilizing more of its resources or utilizing them more efficiently. Our economy can grow significantly, adding perhaps ten percent to the level of output, by returning to relatively full employment. If that is our goal — and I believe it should be, and it is, by the way, the law of the land — government can contribute in a major way to realizing it. Monetary and fiscal policy should be adequately stimulatory to provide sufficient aggregate demand to buy all of the goods and services that a full employment economy would produce. And more than that, there should be government action, as I have suggested earlier, by way of employment tax credits and subsidies to private firms, training programs and direct public employment, as well as special efforts to bridge the gap from school to job, all designed to increase our labor force and provide maximum employment.

Government should as well move to improve our entire educational system, both by investing greater resources in education and bringing about more efficient use of them. Government should see to it that adequate social and overhead capital is invested and it should be alert to the needs for intervention related to market failure which have been one of the themes for this statement.

Beyond all this, however, government could also move to increase our growth rate by constraining us to consume less out of a full employment economy and divert more of our resources to accummulating capital for future production. Here I must voice concern. It is not clear to me why government should impose its will and tell us to live less well now so that we may live better in our old age or so that our children or grandchildren may live better. That is certainly a decision which each of us should be able to make with due regard to the rates of return that the economy can provide to real saving and investment. For the government to impose its will is both a needless violation of individual choice and an imposition on the allocation of resources which has every likelihood of proving inefficient. We may end up depriving ourselves of current consumption to accumulate capital which proves of relatively little value in producing the consumption that we or our descendants might want in the future.

## Questions and Summary Answers

Can monetary and fiscal policies alone be relied on to create the conditions for sustained long-run economic growth?

Wise, general macroeconomic monetary and fiscal policies can go a long way. They have their limitations but our current difficulties stem less from the intrinsic limitations of such policies than from our failure to follow them.

Can industrial policies, which channel resources to specific industries, strengthen our competitive position in the world economy and increase our growth rate?

It is conceivable that they can, but they may also strengthen some industries at the expense of others, weaken our overall competitive position and decrease our growth rate. There can be market failure which warrants government intervention. But it is frequently safest and best to acccept market outcomes unless there are clear indications that the market solution can be expected to be suboptimal.

These indications relate to the imperfections of competition, differences between private and public risk, and external effects which cause a divergence between social and private costs and benefits. A major role for government is indicated in the whole area of public investment and human capital.

To what degree should government attempt to manage the economic growth process?

Government should provide a framework which forces the full use of existing resources and, particularly, the achievement and maintenance of a high employment economy. Beyond that, and the intervention indicated by the fundamental criteria enunciated above, government may best leave economic growth — that is the sacrifice of current welfare now for possibly greater welfare in the future -- to the free choice of individuals.

Should the government attempt to allocate capital market resources toward basic or high-growth industries?

Government should foster free competition among American firms and industries and between American industries and the rest of the world. It does have a role in improving mobility of resources, particularly human resources. It should be careful in prejudging the competitive struggle. Outguessing the market as to high-growth industries may well be difficult. Basic industries, apparently in decline, may well recover, leaner and more efficient, if forced to pare costs and face competition.

Current government policy probably works to reduce the desired mobility of resources. Protection of existing industries makes it harder for new ones to move ahead. Tax concessions which benefit established firms with taxable income make it relatively more difficult for new, rapidly growing firms without much taxable income. Changes in the tax law, particularly the accelerated cost recovery system of the so-called Economic Recovery Act of 1981, have tended to distort the allocation of capital by offering uneven benefits for different kinds of capital and to different kinds of firms and industries, and by favoring larger, more capital-intensive firms with taxable income as against smaller, newer firms and those whose costs do not relate as heavily to plant and equipment. Before trying to allocate capital market resources, government might well move to eliminate the distortions in allocation which it currently fosters.

Has U.S. competitiveness declined in recent years, and can any such decline be attributed to government economic policies?

Certain American industries have faced increased competition, with economic growth in much of the rest of the world. International comparative advantages change, and some industries have suffered while others have gained. As long as government policy does not create an overvalued currency -- unfortunately, tight money in the United States has contributed to a substantial appreciation of the dollar -- free trade should be relied upon to encourage those industries in which we have a comparative advantage. The role of government with regard to industries losing their comparative advantage should be restricted to the encouragement of competition and mobility of resources and attempts to reduce human costs of unemployment and unused resources.

What are the economic and political risks of implementing industrial policies?

Industrial policies aimed at providing a full employment framework and appropriate infrastructure of public and human capital may be expected to have a high payoff. Political risks may relate to a failure to persuade the public of the fundamental, principled nature of such a role for government.

Specific industrial policies, of favoring one industry over another, without a basic rationale for government imposing itself on the market, run the economic risk of costly misallocation of resources and the political risk of putting government at the service of persuasive special interests, thus squandering the public wealth of all for the private gain of some.

# Differential Impacts of Tax Incentives for Investment

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Robert Eisner and Steven Bender,* *Northwestern University*

## 1. INTRODUCTION

Tax incentives for investment and their evaluation now have a substantial history. We propose here to extend previous work by Chirinko and Eisner (1981) by analyzing likely differential impacts of the new accelerated cost recovery system and alternative tax incentives. We focus particularly on differences by industry, as between equipment and structures and, to some extent, among broader components of investment and gross national product and related variables.

Our analysis entails two stages. First, we make use of the remarkable Treasury Depreciation Model of the Office of Tax Analysis. This puts together investment data for structures and equipment by depreciation guideline class for each of 58 (or 55) largely two-digit industries. We secure from the Treasury Depreciation Model values and changes in values by industry and type of investment for key parameters of the "neoclassical investment function" and related variables. Second, we apply appropriate changes in these parameters and, most critically and directly, the rental cost of capital, to the investment equations in the Wharton Annual Econometric Model. We thus examine the impact of actual and alternative business tax changes on parameters that may effect investment. We also show how such changes interact with the particular specifications and parameters of an econometric model to generate predictions or forecasts of aggregate and differential impact on investment.

Use of a macroeconometric model is in principle desirable and necessary in view of likely feedbacks or induced effects. These can include

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*We are greatly indebted to Larry Dildine of the U.S. Office of Tax Analysis for output of the Treasury Depreciation Model. We are also greatly indebted to V.G. Duggal for simulations using the Wharton Annual Model. Copies of the larger version of this article, including many detailed tables of both Treasury depreciation output and Wharton model simulations, are available on request.

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demand and accelerator effects that may augment direct stimuli to particular investment. They may also entail supply constraints relating to output, saving and related financial variables. Under conditions of full employment, in particular, increases in some components of investment can only be accomplished by increases in the propensity to save, decreases in net exports, or decreases in other components of domestic investment. Traditional econometric models rarely, if ever, capture these supply constraints adequately.[1]

## 2. THE OFFICE OF TAX ANALYSIS DATA AND MEASURES

The OTA's Treasury Depreciation Model has furnished us with values and changes in values of a number of tax parameters and related variables under the "old tax law" (existing prior to 1981), the new accelerated cost recovery system (ACRS) provisions in effect from 1981 to 1984, the ACRS provisions to be in effect for 1986 and thereafter, and two alternate proposals—halving lives or doubling depreciation rates on all investment (but not lowering tax lives to less than three years) and multiplying the existing investment tax credit on equipment by five but restricting its applicability to net investment. The tax parameters and variables calculated were as follows:

1. $z$, the present value of tax depreciation per dollar of investment.
2. $d^*$, the "equivalent depreciation rate," or constant geometric depreciation rate, which corresponds to any value of $z$ and the rate of discount, $r$, as follows:

   $$d^* = zr/(1 - z).$$

3. $a$, the "deduction equivalent" of tax depreciation and the investment tax credit, $k$, for any given marginal business income tax rate, $u$ (taken as 0.46):

   $$a = z + k/u(1 + \mathrm{r})^{1/2}.$$

4. $c$, the rental cost of capital, or annual (gross) rental necessary to earn a real after-tax rate of return, $x$. Thus for each industry, $j$,

   $$c_j = (x + \delta_j)(1 - k_j - uz_j)/(1 - u),$$

   where $\delta_j$ is the annual rate of economic depreciation in industry $j$.

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[1] A substantial critical discussion of these issues and, in particular, formulations of the rental price of capital and investment equations in six widely regarded quarterly econometric models of the United States economy (BEA, Chase, DRI, Michigan, MPS, and Wharton), are to be found in Chirinko and Eisner (1981).

5. $x^*$, the new net after-tax rate of return when the tax law changes the rental cost of capital from $c$ to $c^*$:

   $$x^* = (c/c^*)\,(x + \delta) - \delta.$$

6. $t$, the "effective tax rate," calculated as $t = (c - \delta - x)\,/\,(c - \delta)$, or $t = 1 - x/(c - \delta)$. If the after-tax net return is greater than the before tax return, as may well prove possible, the effective tax rate is negative.

For simulations in the Wharton model we have redefined the critical rental cost of capital variable, $c$, to be more consistent with the original Jorgenson formulation, not generally applied in empirical work. In particular, instead of assuming a fixed real after-tax return, we have specified a nominal opportunity cost of capital, taken to be the rate of interest, $i$, a deductible portion, $v_j$, calculated from leverage ratios, a general inflation rate $\pi$, and $w$, the proportion of capital gains and losses effectively taxed. Designating our rental cost of capital as $c_2$, we have for each industry $j$,

$$c_{2j} = [(1 - uv_j)i - (1 - uw)\pi + \delta_j]\,[1 - k_j - uz_j]\,/\,(1 - u),$$

where $u = 0.46$, $w = 0.05$,[2] $\rho = 0.16$ = the rate of interest, $i$; $\pi = 0.10$ and $\delta_j = 1/L_{j0}$, where $L_{j0}$ = the ADR tax life in industry $j$ under the old law.

## 3. EFFECTS ON CAPITAL COSTS AND INCOME

Effects on capital cost and income under the new law ACRS will depend primarily upon the extent to which tax lives are shortened. The grouping of all formerly depreciable assets into four main, general categories (of essentially 14½, 9½, 4½, and 2½ years, not "15–10–5–3"), regardless of either economic or previous tax depreciation lives, implies that the largest impact will be on those categories of investment where capital deductions are most accelerated. Thus, ACRS will by 1986 reduce the "equivalent life" for structures to 13.5 years, from 31.3 years under the old law, and bring a 62 percent increase in the present value of depreciation, $z$, from 0.374 to 0.604. For equipment, by contrast, the average equivalent life will be reduced only from 7.6 to 4.4 years (42 percent), entailing an increase in the value of $z$ (using a constant discount rate of 12 percent and ignoring leverage) of only 13.7 percent, from 0.746 to 0.848. ACRS also entails some increase in the effective investment tax credit for equipment, from an average of 8.4 percent to 9.1 percent.

Using the OTA definitions, the rental cost of capital will be reduced 9.5

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[2] After Feldstein (1980), p. 322, and Friend and Hasbrouck (1981), pp. 10–11.

percent for equipment but 13.4 percent for structures. Substantial differences by industry emerge in effects on the rental cost of equipment, ranging from a reduction by 1986 of 14.0 percent in communications, 13.8 percent in primary metals, and 13.4 percent in tobacco, to 6.5 percent in utilities and 6.6 percent in electrical machinery and in apparel. Similar differences in effects on $z$ and on $c$ emerge for total investment of each industry, where the differences are compounded by differences in the proportions of equipment and structures in each industry. Thus, on the OTA formulations applied to the 26 industry categories in the Wharton Annual Model, reductions in $c$ range from 14.1 percent for communications, 13.8 percent for primary metals, 13.5 percent for tobacco, and 13.4 percent for petroleum refining to 8.6 percent for electrical machinery and for agriculture, 8.7 percent for motor vehicles, and 8.9 percent for logging.

On the OTA assumption of a 4 percent after-tax real return under the old law, ACRS would raise the after-tax rate of return 32.6 percent to a new average of 5.3 percent in the first phase, 1981–84 provisions, and by 44.0 percent to an average of 5.8 percent in the 1986 provisions. The range of increase in after-tax return for 1981–84 extends from a 19.3 percent increase for electrical utilities to a 48.9 percent increase in cement and, for 1986, from a 28.1 percent increase for finance and insurance to a 59.9 percent increase in sugar products and 59.7 percent in railroads.

Turning to effective tax rates with the OTA assumptions, for 1981 the average effective rate of 40 percent is reduced by 40.4 percent to 23.8 percent. Yet these reductions range from 99.8 percent (22.6 percent to virtually zero), in the case of CATV (cable television), to 22.9 percent (from 40 percent to 31.1 percent), for electric utilities. For 1986, the average reduction in the effective tax rate is 58 percent but the rate actually turns negative for a number of industries—minus 22.2 percent for CATV, minus 18.1 percent for railroads, minus 16.8 percent for construction, minus 15.7 percent for motor vehicles, minus 14.0 percent for oil and gas drilling, and minus 10.8 percent for oil and gas, among the more conspicuous cases.

Our formulations of the rental cost of capital, $c_2$, which take into account leverage ratios and capital gains or inflation, reveal similar variation in impact of the new tax law. We also considered doubling of tax depreciation and high marginal investment tax credit alternatives.[3] This last proposal, it should be explained, would set the investment tax credit at five times the existing credit but apply only to net investment, that is, the difference between investment in equipment and tax depreciation on equipment. Since the incentive effect on new investment in this proposal is diluted by the lesser credit to be expected on future investment because of higher future depreciation charges, the marginal investment tax credit would enter the cost of capital as $k^* = 5(1 - z)k$.

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[3] Data for both proposals are available from the authors upon request.

## 4. SIMULATIONS ON THE WHARTON ANNUAL MODEL

By way of illustration of the differential impacts of tax incentives for investment, we have undertaken a set of simulations over the years 1981 through 1990 on the Wharton Annual Model. These include

1. a baseline path with the depreciation and investment tax credit provisions of the old tax law,
2. the accelerated cost recovery system of the new tax law,
3. the half-life or double rate depreciation modification to the old tax law, and
4. the high marginal tax credit, ITC = $5k(I_e - D_e)$.

The critical parameter in the investment equations affected by the tax incentives is the value of $c$, the rental cost of capital. To avoid introducing discrepencies between our measures of $c$ and the measures in the estimated Wharton equations, our procedure was to furnish sets of $\Delta c$'s, that is the relative change in the value of our measure of $c$ brought about by the specified tax changes. In general, for purposes of the simulations, we used

$$\Delta c_{2sjt} = (c_{2sjt} - c_{20jt})/c_{20jt},$$

where $c_{2sjt}$ is the rental cost of capital, $c_2$, for proposal $s$, in industry j, in the year $t$, and $c_{20jt}$ is the cost, $c_2$, for the old law. The rental cost generated in the Wharton model was then in each case multiplied by $(1 + \Delta c_{2sjt})$.[4]

The year subscript, $t$, is necessary because of the phase-in properties of the ACRS in the new tax law. The new law specifies three different sets of depreciation or cost recovery rates, one for the years 1981–84, another for 1985, and a third and final set for the years beginning with 1986. This suggests a further complication, however. Would not firms contemplating investment expenditures in 1984, for example, take into consideration the saving in the cost of capital that they could realize by delaying their investment until 1985?

To attempt to model this, we added to the "static" values of $c$ for each of the years to 1985 an amount equal to the saving in rental cost at annual rates which could be realized by delaying investment until the next scheduled reduction in rental costs. It was assumed in this calculation that the average date of investment of each year from 1982 to 1985 was July 1. For 1981 there was the further complication that while this provision of the tax law was made retroactive to January 1, 1981, it is probably unreasonable to expect that firms made investment decisions on the basis of this provision much before it was passed by Congress on August 4. We have thus arbitrarily halved the effects for 1981 and assumed the average date of investment subject to the incentive in 1981 was October 1.

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[4] A complete set of $\Delta c_2$'s is available upon request from the authors.

We assumed the rental cost equal to the static rental cost $c^s_{86}$ for the years 1986 and thereafter. We took the static rental cost for 1985, $c^s_{85}$ as essentially halfway between those for 1981–84, $c^s_{81}$, and for 1986. We thus calculated "dynamic" rental costs for the years 1981–85, taking into account rational expectations of future changes in rental costs, as follows:

$$
\begin{aligned}
c^s_{85} &= (c^s_{81} + c^s_{86})/2 \\
c_{81} &= 0.5c^s_{80} + 0.5[c^s_{81} + \tfrac{4}{13}(c^s_{81} - c^s_{85})] \\
c_{82} &= c^s_{81} + 0.4\,(c^s_{81} - c^s_{85}), \\
c_{83} &= c^s_{81} + \tfrac{2}{3}(c^s_{81} - c^s_{85}), \\
c_{84} &= c^s_{81} + 2(c^s_{81} - c^s_{85}), \\
c_{85} &= c^s_{85} + 2(c^s_{85} - c^s_{86}), \\
c_{86+t} &= c^s_{86}, \qquad t = 0, 1, 2, 3, 4.
\end{aligned}
$$

As observed in Chirinko and Eisner (1981), results of policy simulations with large scale econometric models depend very much upon critical specifications. We may briefly note, therefore, several critical elements in the Wharton Annual Model.

1. The 26 industry equations for nonresidential fixed investment each apply to the total of equipment and structures. The divisions of total nonresidential fixed investment for each industry into equipment and structures are then functions of current and past relative price deflators for equipment and structures.
2. The industry investment equations are usually distributed lag functions of current and past values of the ratio of the price of industry output to the rental cost of capital, product originating in the industry, and previously existing capital stock. In some industries the rental cost of capital variable does not appear and hence there can be no direct effect of the tax incentives.

The rental cost of capital variables are generally of the form

$$c = q(i + \delta)(1 - k - uz)/(1 - u),$$

where $q$ is a price deflator for nonresidential fixed investment and, $i$ is a relevant bond rate (for industrials, utilities or rails) and the other variables are as previously defined. There is no variable for the rate of inflation or for capital gains taxes and there is no reference to tax deductibility of interest rates or to leverage ratios.

Key to determination of rates of interest is an M2 equation where this measure of the quantity of money is a function of current and lagged changes in real GNP and in the GNP price deflator. Over a period of two years the basic ingredient of the model's money supply is fully accommodative to changes in nominal GNP. Since changes in the rate of interest relate essentially to changes in the velocity of circulation of money, there is little or no upward pressure on interest rates from the increases in investment demand or output that may be generated by investment tax incentives.

The investment price deflators are derived as weighted averages of composite gross output prices in which elements of an endogenous final demand matrix are used as weights. It is not clear to what extent increased investment demand may have a negative feedback in terms of higher relative prices of capital goods.

Thus, with the uncertainty of appearance of adjustment costs or increasing supply prices of investment goods, and with accomodative monetary policy, the model does not offer much, if any, scope for operation of the total investment and saving contraints that we cited early in this article.

The investment equations themselves offered varying amounts of scope for direct influence of tax law changes on the rental costs of capital. In six industries—lumber and wood products, electrical machinery, instruments, non-auto transportation, equipment and miscellaneous manufacturing, petroleum refining, and electric utilities—the rental cost of capital variable did not enter. We presume that when investment equations for these industries were estimated, "reasonable" or statistically significant coefficients involving the rental cost of capital were not obtained. Whatever the reason, direct effects of tax incentives are thus now constrained to be zero in these industries.

In the other industries, the rental cost of capital always enters as the denominator of a fraction involving either the price deflator for output of the industry, *P*, or the current dollar value of output, *PX*, as indicated in Table 1. Where *PX* does not enter, output (*X*) does. Finally, the capital

Table 1: Percentage Changes in Investment over Baseline and Rental Cost of Capital, Compared. Wharton Annual Model, New Law (Constant Dollar Investment)

| Industry | $I$<br>1982 | 1984 | 1986 | 1988 | 1990 | $C$<br>1986 | 1990 | Variables in Investment Equation[a] |
|---|---|---|---|---|---|---|---|---|
| All industries | 0.95 | 2.53 | 3.75 | 5.15 | 5.91 | | | |
| Farm | 0.03 | 1.38 | 4.34 | 3.93 | 5.34 | − 8.33 | − 8.47 | $P/C,X,K$ |
| Mining | 0.39 | 1.31 | 0.54 | 2.01 | 1.60 | −10.12 | −10.30 | $P/C,X,K$ |
| Manufacturing | 0.57 | 1.67 | 2.43 | 3.42 | 3.90 | | | |
| Lumber | 0.00 | 0.06 | 0.33 | 0.74 | 1.10 | − 8.82 | − 9.01 | $X,K$ |
| Furniture | 4.29 | 6.95 | 10.94 | 13.38 | 16.56 | −10.13 | −10.31 | $PX/C,K$ |
| Stone, clay, and glass | 2.13 | 4.36 | 2.85 | 7.51 | 5.95 | −13.02 | −13.22 | $P/C, X,K$ |
| Primary metals | 0.68 | 4.02 | 7.18 | 8.44 | 10.58 | −13.83 | −14.02 | $P/C,X,K$ |
| Fabricated metals | 5.58 | 9.83 | 20.48 | 30.77 | 39.36 | − 9.41 | − 9.61 | $PX/C.K$ |
| Nonelectrical machinery | 0.69 | 2.50 | 3.95 | 5.34 | 6.50 | − 9.82 | −10.02 | $P/C, DX,K$ |
| Electrical machinery | 0.08 | 0.45 | 1.00 | 1.48 | 1.85 | − 8.42 | − 8.62 | $X, K$ |
| Motor vehicles | 0.50 | 1.95 | 1.93 | 3.51 | 3.18 | − 8.53 | − 8.71 | $P/C, X, K$ |
| Nonauto trans. equip. | 0.11 | 0.41 | 0.57 | 0.66 | 0.85 | −10.03 | −10.20 | $X, K$ |
| Instruments | 0.45 | 1.23 | 1.67 | 2.39 | 2.71 | − 9.82 | −10.03 | $X, K$ |
| Food and Beverage | 0.19 | 0.55 | 1.04 | 1.45 | 1.53 | −11.72 | −11.91 | $P/C, X, K$ |
| Tobacco | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | − 0.13 | −0.43 | $I$ Exog. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Textiles | 0.50 | 1.91 | 2.61 | 2.78 | 2.98 | − 9.73 | − 9.91 | *P/C, X, K* |
| Apparel | 1.95 | 2.77 | 4.25 | 5.30 | 5.86 | − 9.33 | − 9.50 | *P/C, X, K* |
| Paper | 0.50 | 2.48 | 3.34 | 4.71 | 5.20 | −12.12 | −12.32 | *P/C, X, K* |
| Printing/publishing | 1.60 | 3.74 | 5.27 | 7.43 | 8.34 | −10.23 | −10.41 | *PX/C, K* |
| Chemicals | 0.65 | 1.48 | 1.87 | 2.30 | 2.52 | − 9.53 | − 9.71 | *P/C, X, K* |
| Petroleum | 0.00 | 0.05 | 0.24 | 0.49 | 0.65 | −13.42 | −13.61 | *X, DUM, K* |
| Rubber | 0.60 | 2.88 | 4.53 | 5.48 | 6.62 | −12.12 | −12.32 | *P/C, X, K* |
| Leather | 0.30 | 1.10 | 1.70 | 2.67 | 3.78 | −10.32 | −10.52 | *D(P/C), X, K* |
| Transportation | 6.23 | 15.36 | 25.48 | 36.24 | 43.76 | −11.41 | −11.59 | *PX/C, K* |
| Utilities | 0.38 | 1.27 | 2.63 | 4.40 | 5.79 | −11.62 | −11.82 | *X, CAPU, W, W/C* |
| Communications | 0.00 | 0.29 | 1.61 | 3.24 | 4.31 | −14.02 | −14.21 | *PX/C, K* |
| Commercial and other | 1.68 | 3.95 | 5.07 | 6.50 | 7.03 | −10.60 | −10.60 | *P/C, X* |

[a] $I$ = investment
$C$ = rental cost of capital
$P$ = price of output or value added
$X$ = real output or value added
$K$ = capital stock
$DX$ = change in output
$D(P/C)$ = change in $P/C$
$DUM$ = dummy variables
$CAPU$ = capacity utilization rate
$W$ = wage rate.

stock enters in all equations except those for utilities and services and trade, generally but not always with negative coefficients for immediately lagged values and positive coefficients for the longer lags.

The impact of investment incentives may be expected to be greatest where the coefficients of variables containing the rental price of capital are highest. It must be noted, however, that estimated coefficients of the rental costs of capital variable will depend upon the constraints under which they are estimated.[5] In particular, where the rental cost of capital, *c*, enters only in the combined variable, *P/c*, estimated coefficients are determined by relationships involving *P* as well as *c*. Moreover, where *c* appears in the variable, *PX/c*, estimated coefficients are influenced as well, perhaps overwhelmingly, by the effects of output on investment.

Any observed relation between *c* and investment, further, may stem from variance and covariance involving components of *c* other than tax factors. Since changes in investment should in principle depend upon changes in relevant expectations of the future, the additional issue arises whether the effects of changes in tax parameters have the same relation to changes in their expected values in the future as do changes in other factors in the rental cost of capital.

All the current simulations with the Wharton Annual Model accept and utilize the investment equations in its currently operating version.[6] We have endeavored, however, to distinguish among direct effects of tax incentives in the Wharton investment equations and the consequences of feedback from the monetary sector. Thus, in our simulations of the accelerated cost recovery system (ACRS) of the new tax law, we have undertaken three successful runs.[7] First we have produced a baseline path, the new tax law without ACRS. Second, we have simulated the new law with fully feedback, including M2 determined endogenously within the model. Third, we have constrained M2 to follow its baseline path, that is, the same path as followed in the simulation without ACRS.

## 5. INDICATED EFFECTS ON INVESTMENT

As may have been anticipated, effects of the new tax law on investment are largest in the simulation with no constraints on the endogenous movements within the model. These effects are nevertheless modest. ACRS would increase constant dollar nonresidential fixed investment, the prime target of the investment tax incentives, by only 0.78 percent in 1982, 2.93 percent in 1986, and 4.64 percent in 1990. In current dollars the indicated increase over baseline of $20.2 billion for 1986 may be compared with the $61.3 billion static loss in business tax revenues estimated by the Treasury for fiscal 1986 and the $40.3 billion loss in corporate tax revenues shown in the simulation. The overall effects on constant dollar nonresidential fixed investment are 2.10 percent in 1986 in the simulation in which M2 is held at its baseline path (Table 2). Effects by industry are shown in Table 3. This is less than where M2 is free to accommodate, some 28 percent less, as interest rates are higher: the corporate bond rate is virtually unchanged in the unconstrained simulation but up 15 basis points and 26 basis points, 1.29 percent and 2.20 percent, in 1984 and 1986, respectively, when M2 is held at its baseline path.

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[5] This is discussed more fully in Chirinko and Eisner (1981).

[6] A set of runs was also done with a new group of investment equations in manufacturing which are being developed in the Wharton model. These offer very large and, at least for our purposes capricious, effects of tax incentives, in part at least apparently because of feedback effects on wages which then determine capital-labor ratios and capacity.

[7] An attempt to simulate effects from the investment equations themselves, holding other blocks of the model at their baseline values, was not successful.

The relative impact of ACRS on investment by industry indicated by the Wharton Annual Model turns out to have very little to do with relative effects on rental cost of capital. Results rather are dominated by the structures of the various investment equations, as shown in Tables 1 and 4.

First there is no investment equation for the tobacco industry, which is kept exogenous, so that the presumed impact of ACRS is identically equal to zero in all years. Turning to the unconstrained simulation, we note as anticipated that industries for which *c* does not enter the investment equation show only trivial, feedback effects of ACRS. Thus, as shown in Table 4, the percent increases in investment over baseline by 1986 in lumber, electrical machinery, other transportation equipment, instruments, and petroleum had a mean of 0.76 percent.

Next, there is the set of industries in which the rental cost of capital enters as the denominator of the fraction *P/c*, with output or value added entered separately. We find generally very modest increases in investment by 1986 in mining, stone, clay and glass, primary metals, machinery, motor vehicles, food, textile mill products, apparel, paper, chemicals, rubber, nonelectrical machinery, leather, utility services, and in commercial and other. The simple, unweighted average of these changes in these industries was 3.19 percent.

Finally, there was a set of industries in which the critical variable in the investment equation was of the form *PX/c*, involving the ratio of the dollar amount of value added or output to the rental cost of capital. Here, as noted in Chirinko and Eisner, estimated parameters of *c*, constrained to be equal in absolute amount to those of *PX*, may well turn out to be high and therefore imply large effects of tax incentives. Indeed, that is what most

Table 2: Wharton Annual Model, New Law, M2 Exogenous, Percentage Change over Baseline, GNP and Components in Constant Dollars

|  | **1981** | **1982** | **1984** | **1986** | **1988** | **1990** |
|---|---|---|---|---|---|---|
| **GNP** | **0.04** | **0.14** | **0.32** | **0.44** | **0.67** | **0.68** |
| PCE | 0.02 | 0.07 | 0.16 | 0.23 | 0.36 | 0.39 |
| Durables | 0.08 | 0.18 | 0.30 | 0.36 | 0.63 | 0.53 |
| Nondurables | 0.02 | 0.07 | 0.17 | 0.27 | 0.40 | 0.46 |
| Services | 0.01 | 0.03 | 0.10 | 0.17 | 0.24 | 0.30 |
| GPDI | 0.22 | 0.82 | 1.64 | 2.20 | 3.27 | 3.12 |
| Fixed Investment | 0.20 | 0.72 | 1.51 | 2.10 | 3.13 | 3.10 |
| Residental structures | 0.04 | −0.03 | −0.68 | −1.13 | −0.18 | −1.22 |
| Change in Business Inventories | 1.12 | 9.77 | 4.77 | 5.74 | 8.04 | 3.96 |
| Net exports | −0.14 | −0.43 | −0.93 | −1.08 | −1.59 | −1.47 |
| Exports | 0.00 | 0.00 | 0.02 | 0.05 | 0.08 | 0.11 |
| Imports | 0.06 | 0.18 | 0.38 | 0.50 | 0.70 | 0.66 |
| Government Purchases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| M2 (current $) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Corporate bond rate | 0.06 | 0.28 | 1.29 | 2.20 | 3.35 | 4.42 |
| Price def—PCE | 0.00 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
| Price def—GNP | −0.00 | −0.00 | −0.03 | −0.05 | −0.08 | −0.09 |
| Price def—Bus fix I | −0.00 | −0.03 | −0.11 | −0.19 | −0.25 | −0.30 |
| Employment | 0.02 | 0.07 | 0.15 | 0.19 | 0.26 | 0.22 |
| Unemployment | −0.23 | −0.76 | −1.89 | −2.25 | −3.30 | −2.74 |

**Table 3:** Percentage Changes in Investment over Baseline, Wharton Annual Model, New Law, M2 Exogenous (Constant Dollar Investment)

| Industry | 1981 | 1982 | 1984 | 1986 | 1988 | 1990 |
|---|---|---|---|---|---|---|
| All industries | 0.2 | 0.9 | 2.3 | 3.2 | 4.2 | 4.5 |
| Farm | 0.0 | 0.0 | 1.3 | 3.9 | 2.9 | 4.1 |
| Mining | 0.0 | 0.4 | 1.2 | 0.3 | 1.6 | 1.1 |
| Manufacturing | 0.1 | 0.5 | 1.5 | 2.0 | 2.7 | 2.8 |
| Lumber | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Furniture | 1.3 | 4.2 | 6.3 | 9.1 | 10.2 | 11.4 |
| Stone, clay and glass | 0.0 | 2.1 | 4.1 | 1.9 | 5.8 | 3.5 |
| Primary metals | 0.1 | 0.7 | 3.7 | 6.3 | 7.0 | 8.2 |
| Fabricated metals | 1.7 | 5.4 | 8.6 | 16.8 | 23.5 | 27.3 |
| Nonelectrical machinery | 0.1 | 0.7 | 2.3 | 3.4 | 4.4 | 4.9 |
| Electrical machinery | 0.0 | 0.1 | 0.4 | 0.8 | 1.1 | 1.3 |
| Motor vehicles | 0.1 | 0.5 | 1.7 | 1.4 | 2.7 | 2.1 |
| Nonauto transportation equipment | 0.0 | 0.1 | 0.3 | 0.4 | 0.5 | 0.6 |
| Instruments | 0.1 | 0.4 | 1.1 | 1.3 | 1.9 | 1.9 |
| Food and beverage | 0.0 | 0.2 | 0.5 | 0.8 | 1.1 | 1.1 |
| Tobacco | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Textiles | 0.1 | 0.5 | 1.5 | 1.8 | 2.0 | 1.7 |
| Apparel | 0.7 | 1.9 | 2.4 | 3.5 | 4.2 | 4.2 |
| Paper | 0.0 | 0.5 | 2.3 | 2.8 | 3.7 | 3.8 |
| Printing/publishing | 0.4 | 1.6 | 3.5 | 4.4 | 5.9 | 6.0 |
| Chemicals | 0.2 | 0.6 | 1.2 | 1.3 | 1.6 | 1.7 |
| Petroleum | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.5 |
| Rubber | 0.1 | 0.6 | 2.5 | 3.6 | 4.0 | 4.7 |
| Leather | 0.1 | 0.3 | 1.0 | 1.4 | 2.2 | 2.9 |
| Transportation | 1.6 | 6.1 | 14.2 | 21.6 | 28.7 | 32.2 |
| Utilities | 0.1 | 0.4 | 1.1 | 2.2 | 3.4 | 4.2 |
| Communications | 0.0 | 0.0 | 0.3 | 1.6 | 3.0 | 3.7 |
| Commercial and other | 0.5 | 1.6 | 3.7 | 4.5 | 5.7 | 5.7 |

frequently occurs. In furniture, the Wharton model indicates that investment in 1986 would be up by 10.94 percent; in fabricated metals it would be up by 20.48 percent; in printing and publishing it would be up by only 5.27 percent and in communications only by 1.61 percent; but in transportation, investment would be up by 25.48 percent in 1986. The unweighted mean percent increase in investment for these industries was 12.76 percent.

Similar patterns of impact on investment by industry are found in the

**Table 4:** Percent Impact on ACRS Rental Cost of Capital, *c*, and on Real Investment, *I*, by Industry, Investment Function Specifications and Simulation, for 1986

| | Simulation | | | |
|---|---|---|---|---|
| | New Law | | Double Depreciation | High ITC |
| **Specification Industry and Statistic** | *c* | *I* | *I* | *I* |
| A. *No c* | | | | |
| Lumber | − 8.82 | 0.33 | 0.48 | 0.21 |
| Electrical Machinery | − 8.42 | 1.00 | 1.40 | 0.76 |
| Nonauto Trans. Equip. | −10.03 | 0.57 | 0.75 | 0.42 |
| Instruments | − 9.82 | 1.67 | 2.21 | 1.28 |
| Petroleum | −13.42 | 0.24 | 0.35 | 0.16 |
| Mean | −10.10 | 0.76 | 1.04 | 0.57 |
| $\sigma$ | 1.97 | 0.59 | 0.77 | 0.46 |
| $\sigma$/Mean | − 0.20 | 0.77 | 0.74 | 0.80 |
| New Law $r_{cI} = 0.39$ | | | | |
| $\Delta I\% = 1.94 + 0.117\Delta c\%$ | | | | |
| B. $P/c^a$ | | | | |
| Farm | − 8.33 | 4.34 | 7.11 | 2.38 |
| Mining | −10.12 | 0.54 | 1.20 | 0.65 |
| Stone, Clay and Glass | −13.02 | 2.85 | 3.93 | 2.52 |
| Primary Metals | −13.83 | 7.18 | 8.95 | 6.44 |
| Motor Vehicles | − 8.53 | 1.93 | 2.87 | 1.61 |
| Food and Beverage | −11.72 | 1.04 | 1.29 | 0.57 |
| Textiles | − 9.73 | 2.61 | 3.81 | 1.69 |
| Apparel | − 9.33 | 4.25 | 5.27 | 1.30 |
| Paper | −12.12 | 3.34 | 4.84 | 3.44 |
| Chemicals | − 9.53 | 1.87 | 2.69 | 1.20 |
| Rubber | −12.12 | 4.53 | 5.91 | 3.32 |
| Nonelectr. Machinery | − 9.82 | 3.95 | 5.99 | 2.48 |
| Leather | −10.32 | 1.70 | 1.86 | 0.54 |
| Utilities | −11.62 | 2.63 | 4.77 | 6.18 |
| Commercial and Other | −10.60 | 5.07 | 5.85 | 2.59 |
| Mean | −10.72 | 3.19 | 4.42 | 2.46 |
| $\sigma$ | 1.63 | 1.74 | 2.21 | 1.81 |
| $\sigma$/Mean | − 0.15 | 0.54 | 0.50 | 0.74 |
| New Law $r_{cI} = -0.33$ | | | | |
| $\Delta I\% = -0.59 - 0.35\Delta c\%$ | | | | |
| C. *PX/c* | | | | |
| Furniture | −10.13 | 10.94 | 12.68 | 3.48 |
| Fabricated Metals | − 9.41 | 20.48 | 19.41 | 4.73 |
| Printing/Publishing | −10.23 | 5.27 | 6.94 | 3.13 |
| Transportation | −11.41 | 25.48 | 31.91 | 19.77 |
| Communications | −14.02 | 1.61 | 2.54 | 3.29 |
| Mean | −11.04 | 12.76 | 14.70 | 6.88 |
| $\sigma$ | 1.81 | 10.06 | 11.52 | 7.23 |
| $\sigma$/Mean | − 0.16 | .79 | 0.78 | 1.05 |

| | Simulation | | | |
|---|---|---|---|---|
| | New Law | | Double Depreciation | High ITC |
| **Specification Industry and Statistic** | $c$ | $I$ | $I$ | $I$ |
| New Law $r_{cI} = .39$ | | | | |
| $\Delta I\% = 40.76 + 2.54\Delta c\%$ | | | | |
| *All (except Tobacco)* | | | | |
| Mean | −10.66 | 4.62 | 5.80 | 2.96 |
| $\sigma$ | 1.68 | 6.07 | 6.89 | 3.90 |
| $\sigma$/Mean | − 0.16 | 1.32 | 1.19 | 1.32 |
| New Law $r_{cI} = -0.01$ | | | | |
| $\Delta I\% = 4.17 - 0.04\Delta c\%$ | | | | |

[a] Includes $D(P/c)$ and $(w/c)$.

simulations for double-rate depreciation and the high marginal investment tax credit. Looking at the 1986 departures from baseline in the double depreciation simulation, we of course again find very little movement for the industries where c does not appear in the investment equations. In this set the unweighted mean of increases in investment was 1.04 percent. For industries in which *c* entered as the denominator of a fraction in which *P* (or in utility services, the wage rate) entered as a numerator, effects were again modest but somewhat larger; the mean increase was 4.42 percent. In the last group, where *PX/c* entered the investment function as a composite variable, the indicated increases in investment were again much higher in three of the five industries to which this specification applied. The unweighted mean increase was 14.70 percent. With the high marginal ITC the corresponding smaller mean increases for the three groups of industries were 0.57 percent, 2.46 percent, and 6.88 percent.

Over the 25 Wharton industries with investment equations the relation between ACRS changes in investment and changes in the rental cost of capital is described in Table 6 by the poorly fitting:

$$\Delta I\% = 4.17 - 0.04\Delta c\%, \qquad r = -0.01.$$

Indeed the only subset of industries in which the regression coefficient was negative was that for the P/c group where:

$$\Delta I\% = -0.59 - 0.35\Delta c\%, \qquad r = -0.33.$$

The relative differences in industry effects of ACRS on the rental cost of capital, and the other investment tax incentives as well, are thus dwarfed by the differences in specifications and estimated parameters among the investment equations. And that indeed is our story, but is it a story about the real world or about the Wharton Annual Model?

Our own view is that in the first instance it is essentially a story about the model. We have gotten out of the computer what was put in. We would suspect that investment equations, notoriously difficult, are particularly lacking in robustness at 2-digit industry levels. It may be that the true structures of the investment equations are really quite similar but that random results in the estimation process laid the basis for the critical specification differences we have noted. Once imbedded in the model, the results are well predetermined.

In particular, the $PX/c$ variable can create considerable havoc as changes in $c$ are mapped into changes in investment through high coefficients of the composite variable.

But if we caution skepticism as to the particular differential impacts of tax incentives on investment by industry indicated in the Wharton model, we have no reason to discourage the conjecture that differences in the real world, perhaps quite other differences, may be substantial. First, to the extent that the channel of effects does go through the rental cost of capital, the quite various effects of ACRS on $c$ will generate corresponding various effects on investment.

Second, the actual impact on tax liabilities and, in particular, the tax on marginal investment, may vary much more than indicated in our simplified calculations. As indicated in a letter to us from Larry Dildine, "None of these [Treasury Depreciation Model] calculations takes account of limitations on the current use of deductions or ITC's due to carryovers, nor is any allowance made here for elections to use longer recovery periods or optional expensing, under new or old law . . . Data from tax returns has not been used directly in any of the estimates." And as has been made abundantly clear in discussion of leasing and sale of investment tax advantages, many firms and whole industries do not have a taxable income to take full advantage of the tax incentives. (This problem has hardly been solved by the lease–sale arrangements.)

But most important, the determinants of investment are varied and the factors that make investment incentives important are also varied. Industries with excess capacity and slow growth may respond little if at all to investment tax incentives. Industries that face sharp supply constraints either in money capital or in the industries supplying capital goods may also respond differently from industries without such contraints. And interrelations among investment incentives, supply prices, interest rates, inflation and other taxes may be more subtle than the capacity or sensitivity of most econometric models.

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Representative **Hamilton**. Well, thank you very much, gentlemen. The committee had high expectations of your appearance this morning and we've not been disappointed. Each of your statements has been very good. We have benefited from them.

Now, let's begin with a very simple question that occurs to me rather frequently, and that is: Why all this talk about industrial policy? I have been in the Congress for a few years. We have had deep economic problems ever since I've been here. All of a sudden, every subcommittee in the Congress and every committee of the Congress is anxious to get into the question of industrial policy. All of the economists are worked up about it and talking about it and analyzing it, discussing it.

What has happened in the economy of the country? What has happened in the economy of the world? What kind of changes have taken place so that with great alacrity, at least it seems that way to me, everybody's talking about industrial policy?

What kind of changes have occurred to suddenly make everybody on Capitol Hill and down in the White House and everybody else interested in industrial policy? What changes have occurred? I'll just ask that to the panel and let you tackle it.

Mr. Rostow.

Mr. **Rostow**. As an economic historian, Mr. Vice Chairman, I think the answer is fairly simple. First, the extraordinary impact in the seventies of what transpired in the world economy on the older, basic industries. I can attest to the fact that President Kennedy, for example, when he came to responsibility, already was worried about the fate of the older, basic industries as a result of the reequipment of Western Europe and Japan in the fifties, and he took steps, incidentally, to try to make it more attractive to reequip those industries.

But in the seventies, the drama of the relative decline in the automobile, steel, machine tool industries increased by the rise in the price of energy. And the turn of the American consumer to smaller automobiles made that a major item and a good many Members of Congress and the Senate came from States which felt that decline of the old, basic industries under competitive pressure, and that, I think, was one fundamental factor.

The other is the drama of an awareness of the new technologies coming in and the sense that this time we might be kind of a bit like Avis behind Hertz, the sense that we were not necessarily out in front and would not be out in front automatically.

The third element is related to my testimony. In a way, I think that the emphasis on industrial policy where the problems were palpable combined with a sense that this might be a substitute for macropolicy. I was much struck, in fact, I chuckled, on the plane yesterday when I saw that, of all people, Milton Friedman, in effect, said that both the Republicans and Democrats were intellectually bankrupt. The form of the statement was the Democratic leaders attack Reaganomics as a failure. Yet, they, too, are intellectually bankrupt.

I think the difficulty of mounting a macropolicy which would contain inflation, and especially the difficulty of facing up to reorganizing our wage-negotiating institutions to create an effective long-term incomes policy made people turn to something that might be a substitute for it.

So I think it's those three elements.

Representative HAMILTON. Mr. Eads or Mr. Eisner, do you want to comment? Mr. Eads, and then Mr. Eisner.

Mr. EADS. As I say from the testimony that I didn't read, I think there are three or four reasons. I don't disagree with much of what Professor Rostow said. But in some sense, I think you have to understand that this is not really a new debate.

Representative HAMILTON. Not a new what?

Mr. EADS. Not really a new debate. We're using new terms. We call it industrial policy now. I know when our Commission was operating, the word was "planning." The debate goes way back, at least 50 years in this country. It basically concerns the role of Government in influencing private decisions.

What makes the debate different now, in addition to what Professor Rostow said, was, I think, in part, the recognition that the Government plays such a pervasive role in the economy now that some of the old inhibitions that might have kept us from worrying about it, or kept us from thinking seriously about it are no longer there. It used to be that you could end any debate about planning by just saying, "of course the Government can never do that." End of discussion.

Now all you have to do is point out what the Government attempts to do and the degrees to which it intervenes in not just the overall level of the economy, but the microdecisions, and that's no longer a stopping point.

So I think one of the major differences between now and say 10 years ago, 15 years ago, or 30 years ago was that one of the basic, fundamental elements in the old debate has changed and one can present industrial policy not as a change in the level of Government intervention, but as a rationalization, an improvement in coherence, and that changes the debate considerably. That holds out the promise from the industry point of view that Government can be helpful to them.

I think also, as was said, that it is seen as a substitute for making hard decisions about things like wage setting and the setting of macroeconomic policy generally and in a situation where we avoid making hard decisions, we look for things of this sort.

Representative HAMILTON. Mr. Eisner.

Mr. EISNER. I would say that a great part of the impetus comes from the perceived failure of macroeconomic policy. It has been a failure, as I have argued, not because it cannot be a success, but because it has not been pursued correctly. The worldwide recession and the recession in the United States have given the people the notion that something has to be done, since I think they've been mistakenly told that there's nothing that can be done in the way of fiscal policy or monetary policy. That has proved to be impossible. Then they say that we have to do something else.

So a great part of the reason goes to that.

The rest of it, I think, is a matter of ignoring what I would imagine are the main difficulties. They relate, I would say, not so much to the change in the economy, that the basic industries throughout the world are perhaps not as important in terms of the amount of workers that they can use, but a failure to recognize that the base of the pyramid is really human labor.

I would guess if you want to raise productivity, the place to look is in the motivation of workers, their training, their ability to work. And the fact is that there has probably been an alienation in this country and in much of the rest of the world at the work place. The worker doesn't feel that he's getting the benefit of what he produces. He doesn't find that his pay perhaps reflects closely what he achieves. There is absenteeism. There is alcoholism. There is drug use. And there are vast reservoirs of unused resources of labor on the job and off the job.

I think if we don't face that, we're really going to run the risk of just developing a whole new gravy train.

It's interesting to me, and I reflected on it briefly here, a few years ago the Congress did enact what was called the Humphrey-Hawkins Act, and we committed ourselves to achieving a goal of 4 percent unemployment. And I guess there was a lot of tongue in cheek at the time that that was passed, but it was rather startling how completely everybody now seems to ignore it. And that was the solution that we recognize, we've recognized for 30, 40 years, that that apparently runs into too many political obstacles and too many people complain that you can't do that. The Economic Report doesn't even proclaim it except, essentially, for 6 and 7 percent unemployment years down the road.

If we abandon that macroeconomic goal of full employment, we're going to be in great trouble. We're not going to find a substitute, in my opinion, by saying that we'll favor this or that industry. We would have a new gimmick—industrial policies.

Representative HAMILTON. Well, I have a lot of questions, but I want to give my colleagues an opportunity to participate. Congressman Lungren and then Congressman Scheuer.

Representative LUNGREN. Thank you, Mr. Vice Chairman. It sounds from what all three of you said that industrial policy, in fact, is not a new idea; it's just a new rubric we're using to get into a number of these questions that you all raised.

One of the questions I have is that those who seem to be strong advocates of industrial policy concede that in the past, a myriad of Government actions may have thwarted efficiency within the economic workings of our country. Yet, they seem to indicate that what we need is a larger governmental intervention in terms of magnitude. And then they argue over where it ought to be.

Don't you find that somewhat to be a contradiction in terms; that is, if one of the major problems is the inefficiency of the actions of Government, that somehow those inefficiencies are going to be overcome by increasing Government action?

To give you some specifics, some of us believe that there are certain —perhaps one of the motivating aspects of getting into the whole industrial policy is the persistent problem of high unemployment, that that is sort of spurring the effort to look into this. And yet, some of us believe that certain actions already taken by Government help contribute to it—the Davis-Bacon Act, the minimum wage, in some circumstances, certainly the social security tax, particularly when you talk to small business people and talk about the discouragement they have for hiring additional people.

If we're going to talk about industrial policy, ought we not also to look at some of these other things that Government may already be doing in terms of intervention which may promote inefficiencies and promote unemployment?

Mr. EISNER. Yes. I do warmly agree with you, sir, that that is the place to look. I don't think there's a contradiction necessarily between saying that we should eliminate some Government interventions and add others. I've tried to stress that you have to have a set of principles which would guide you and that might well call for intervention in the form of spending more on education, having centers to try to get workers hired and trained in private industry.

On the other hand, much of what you do refer to is an intervention which has fostered inefficiency.

I guess I might offer a demurrer on social security which is widely misunderstood. I just saw a recent paper pointing out that for most workers, the combined effect of the social security tax and the benefits that the worker can expect for every extra dollar that he earns, is such that the tax is either low or even negative; that is, by working and paying your tax, you add more to your income, not right now, of course, but in your retirement, to make it pay. That may well be true. In certain categories, workers perceive it. They decide that they do want to work because they want to increase their social security benefits.

Representative LUNGREN. I was talking about employers.

Mr. EISNER. Well, but that has to be reflected—you see, the employer says, I have to pay the social security tax. I've got to pay 6 percent. He may not recognize that maybe he has to pay less in wages if a worker says, gee, if I take a job, I'll be able to get social security. And if I earn more, I'll get more social security. If I have a long recovery, I'll get social security.

So, it's something that one has to study carefully. It's not always clear that the individual employer or firm perceives all of the broader economic consequences of something. He says to himself, I have to pay this tax. If I didn't pay the tax and other things were the same, I'd be better off. He doesn't recognize that if he didn't pay the tax, other things might not be the same, unless somebody else were paying it. He'd have to hire workers who could expect no social security benefits. Well, then, perhaps he'd have to take money out of their pay to provide a bigger retirement fund for them. Or else they might not want to work. They might say, particularly if they're women, I'd rather stay at home and take care of the family. What do I get out of working? If they get out of working additional social security benefits, they may want to work. Then they'll make themselves available at a lower pay.

But I really agree with you in principle. I just would suggest that we look carefully at which things we object to. The Davis-Bacon Act I'm inclined to agree with you on, and there are a number of other things in the way of Government intervention in the trucking industry and the airline industry, where the intervention has been counterproductive and the deregulation, along with competititon, goes a long way in improving productivity.

Mr. ROSTOW. I'd agree with the thrust of what Professor Eisner said. Clearly, in a very wide range of Government activities, it's the time to take stock and prune out and to see if the workings can be rendered more efficient. In pact, this has been due to our getting into areas of social legislation which are where it was extremely difficult for the Congress to go much further, really, than to define certain criteria and objectives and then the bureaucracy moved in in total good faith in the spirit of that legislation. This may well have led to, in a number of instances, overregulation or regulations in the spirit or objectives, but where the costs may have exceeded the benefits. And that kind of pruning out is natural and appropriate.

What I do caution against, as did Mr. Eisner, that one should not take the view, in my judgment, because we've had certain problems with the public sector inhibiting the private sector, that governments can do no good. Probably, governments can do a hell of a lot of good. They built the transcontinental railroads, for example. They created all the technological schools in the country on the basis of which we had the very high agricultural productivity. They put a man on the Moon and brought him back.

If we're going to win the race in the computers, or do well in the race for the fourth or fifth round in the computers, I assure you that the Government is going to play a very big role.

I think we've got to be discriminating and try to put ideologies aside and look at the cases.

Mr. Eads. Most people who make the kind of arguments that you're talking about don't seem to object so much to the volume of Government intervention, but more to its lack of direction, and what they see industrial policy as providing as a way of channeling it. In some sense, the mere demonstrated power of Government, even in an unchanneled way, is very alluring.

I think that they are suffering from what I've called elsewhere the fallacy of misplaced coherence. This is the notion that somehow a government as diverse as ours, reflecting a society as diverse as ours, could be expected to gather a few people and agree upon policies or a set of goals which everybody will accept—or that a lot of them will agree on—and then turn the power of the Government in that direction of achieving those goals. I think it is overly optimistic.

Like my colleagues, I don't believe that we should retreat to an absolute minimalist government where they do nothing but provide the defense and a few other basic services. But I think we should be fairly critical about the roles we ask Government to undertake. Engaging in comprehensive, coordinated planning is not something that our Government is likely to do very well.

Representative Lungren. I just have a major concern about it with respect to the political judgment overriding economic judgment. In some cases it has to be done. But we had a jobs bill and the report has come out to show that more money went to those areas of the country that had lesser unemployment than more unemployment. The Government assistance happened to go in the direction where members of the committee happened to sit. That is a political judgment that I'm very concerned about.

The other thing that I'm concerned about is, as you suggested, Mr. Rostow, we don't go back and look at the things that we have already done. Instead, we have an overarching concern for a grand policy, and we forget what we have already done.

I know you want to get away from ideology, but that reminds me of the old story of the difference between a conservative and a liberal. A conservative walking down the shore seeing somebody drown will throw a rope to him, but make sure that it's 2 feet short just so that he has to at least work part of the way to the rope. The liberal will throw him the rope all the way, but before he comes in, he'll drop his end of the rope and walk down the street to do another good deed. [Laughter.]

I'm concerned about the second part, where we're so busy doing the next good deed, that we never look back at the actual implications of the decisions that we've made.

Thank you, Mr. Vice Chairman.

Representative HAMILTON. Congressman Scheuer.

Representative SCHEUER. Thank you, Mr. Vice Chairman. The question is, Is industrial policy designed to help parts of the country or industries that aren't doing well or should it be to target areas of opportunity?

In Japan, MITI, the Ministry of International Trade and Investment, targets the industries of the future, the computer chip of the future, what have you. And they will tell a particular consortium of industries, why don't you do research in this particular area to produce this particular group of products? And the Government will contribute $25 million, $50 million, maybe $100 million toward the research. And they'll arrange for the bank to give them 10- or 15-year financing. They go with winners. They don't worry about subsidizing losers.

Should our industrial policy contemplate what the role of American industry ought to be in global competition, where we're going to excel and where we can excel and where we ought to define what our comparative advantage is in terms of both resources and technology and skilled labor and try and build on that, and not worry about fairness and not worry about saving the Chryslers and whatever, but go with winners and try and carve out for ourselves a slice of that global competitive pie 10, 15, or 20 years hence.

What should our national policy be? Are we going to try and throw a life preserver to the steel and auto industries or are we going to try and build a firecracker under perhaps firms in Silicon Valley to help them get into an industry that perhaps doesn't even exist now?

Mr. EISNER. I believe that there's a prior question to be answered and that is whether we should have a national policy; that is, a governmental policy, for this other than leaving it to individual initiatives. Our economic principles tell us if you permit free trade, the law of comparative advantage will work out and those industries then that we have a comparative advantage in will flourish and the others will tend to decline.

Now there may well be externalities, as I've suggested. For example, perhaps comparative advantage would indicate that certain high-tech industries which have lots of small firms in them will really move ahead. But perhaps the only way to get foreign sales is to somehow build up a foreign market. And no individual company is in a position to make the foreigners aware of the products he has.

Well, there might then be a role for Government, perhaps, to somehow promote a joint effort, either public or public-private, in the way of selling, of getting the information out. I wouldn't rule that out.

Representative **Scheuer**. Would our antitrust laws rule that out?

Mr. **Eisner**. Well, that's something that you'd have to get your lawyers to check.

Mr. **Eads**. Almost certainly not, I don't think.

Mr. **Eisner**. If not, then, certainly, you can proceed. But I wouldn't outguess and say, well, I have decided that we have a comparative advantage in making the little chips. We're going to start making them. We'll promote it. We'll give a tax incentive. And God knows, we might find that a year from now the Japanese or the South Koreans or the people in Hong Kong have that advantage and we'll have poured all these resources in and then we still can't get anywhere with it.

So I would hesitate in having a national policy that says, we know better than the market that we can promote this, unless we have, as I say, some clear understanding of principle—for this particular reason that we can see. Really, we have the advantage, but because of risk, because of lack of capital, because of the risk or because of the inability to get information around, because of the nature of R&D, there is a role for Government.

And, in a way, the same thing applies to basic industries. If the basic industries are to decline, perhaps they should. Now there may be a role for Government in easing the transition, in trying to promote mobility, in encouraging the retraining of workers. But beyond that, if they really are to decline, it's unwise to try to preserve them.

Mr. **Rostow**. Congressman Scheuer, I may have said this before you came in, but my first comment on your question is it is impossible to form a judgment about whether we should go for the basic industries or back high-tech industries of particular kinds when you're running 10-percent unemployment in the United States and when you've got a 25 percent overvalued dollar.

I don't know how industry has been surviving as well as it has under present circumstances. And I would remind my colleague here that we do, indeed, teach comparative advantage. But one of the assumptions which we constantly tell our students when we lay it out is the assumption of full employment in the countries where you make this comparison.

When you get a mad economic policy that produces 10-percent unemployment and a 25-percent overvalued dollar, which is a subsidy of the imports, how can you tell whether the automobile industry is survivable or not, or steel, or machine tools, or anything else? And that's where we are.

So I don't think that we can answer your question under present circumstances.

The second point that I would make is this business of the Government knowing better than the private sector isn't quite as clear-cut a matter as people make out, notably in the Japanese case. MITI does not operate in a vacuum; it operates in the closest, of the most intimate and continuous contact with the private sector. And when a decision is made to throw your weight behind the fourth or fifth generation computer, this is not some Government bureaucats. This is really all the elements in the society sitting down together and coming to a collective private-public judgment that this looks like a good bet, and then you put your stack in.

And, in fact, I suspect that that is the way it would have to be in the United States. I don't think that some fellows in Washington would sit down in a meeting room or somewhere, a committee room, and say, off the top of their heads, let us go for this or that. They would have some kind of evidence that this looked feasible, and they'd have private fellows tell them, on the whole, it's worth gambling. And the private fellows obviously would have to put in a high proportion of their own money, as the Japanese do.

So, you know, commonsense would play a role. But as you gather from my testimony, as I take the basic industries, which are probably in severe trouble, I do not advocate plunging in with an RFC and a lot of money. I'd say that the first thing we've got to do is to get this economy to sustain growth. And I commend to you the chart which came from Elizabeth Bossong, which is somewhere in my submission for the record, in which she shows the relationship between the rate of increase of GNP and steel production. Despite the falling amount of steel in an automobile, there's a remarkably stable relationship over the past 20 years between the rate of increase in GNP and the rate of increase in steel production.

That may be modified in the future because no such relationship is going to remain a straight line. But I don't rule out, for example, that if we ran the economy with a sustained high growth, that the private markets could finance the reequipment of automobiles, steel, machine tools, if we've got the right kind of management. But there might be a margin of help where the Government could be marginally helpful to these people. That's one kind of job. The high tech is different. At the margin you have something where none of you, I think, would argue against the Government role, none of the purists around this table—namely, fusion power. There the risks are very high. The costs of R&D are very high. The payoffs would be very great to the society. And we're putting in quite a bit of public money, and I think everyone would agree that we should, to see whether fusion power is commercially possible.

It's still an open question.

So I think if we're selective, what's going to emerge is a number of pragmatic decisions which will be reached after quite a lot of osmotic exchange between the public and private sector. We will have Edsels in public policy, but we have had Edsels in private decisionmaking, too.

Representative SCHEUER. Edsel was a private decision.

Mr. ROSTOW. It was a private decision. My own preference, strong preference, is to minimize the role of Government because the minimum functions of Government are ample. And the private sector should do all it can do. But I don't rule out that there may be a highly selective role in both your categories, even if we have high sustained growth, (a) to help the old basic industries get into a long-term viable position, which I'm quite sure is possible, and (b) to make sure that we emerge well from this fourth industrial revolution on which so much depends.

Mr. Eads. You mentioned the Edsel as an example. The private sector produces Edsels. It produces lots of bad products. I think one study I saw said something like 80 percent of all the new product ideas turn out to be failures. The one difference between the private process and the public process is that the private industry tends to liquidate its mistakes faster. The public sector tends to enshrine them and tries to make them work.

That gets me to one of the points I wanted to make in connection with your statement. Regardless of the principles one sets up as guiding his or her industrial policy, I think it's important to recognize that given the way that the political process works in this United States, given where the votes are and that sort of thing, it would inevitably include a large degree of preservationism. You can't give a Government body, no matter how independent you want to make it, control over large sums of money and expect its members to ignore political realities.

So in moving in this direction, I think we have to be candid with ourselves and ask ourselves whether we want to further politicize investment decisions.

The second point I think it's important to remember is the point I tried to make basically in my testimony, that there is, in fact, a very major cost to the businesses concerned of coming to depend more and more on the Government for their decisions. I find it amazing that the electronics industry—who, if I were them, would be running away from industrial policy as fast as I could—seems to be willing to be embraced and perhaps "loved to death" by the Government in its aid to help it.

There is a cost to this. We may well end up wanting to do it, anyway. There may be some good reasons for doing some of it, but let us go into it with our eyes open, with the knowledge of how our political system works and not pretend that we're Japan.

Mr. Rostow. Could I add one example of where the market is a rather poor indicator of where investment should go?

From all the analyses I've been able to do, if the world economy revives tolerably, the real price of energy will resume its rise, sometime in the late 1980's. Now the conventional wisdom in this field has not been notably good, but there are really quite serious reasons, even geological reasons, for assuming that that will be the case.

The market signaled a fall in the price of oil. Immediately, the synthetics industry in the United States withered when the market signaled it. The lead times in that industry are, like, 7 and 8 years. Was it wise, in the public interest, assuming that the best judgments we have are correct about the future price of energy in the not-so-long-distant future, to have eviscerated that effort in response to short-term market signals?

In other words, the short-term market signals don't always work very well because the tendency of the market is to assume that what happens today is likely to be the long-term trend.

Mr. EADS. Those short-term market signals that you talk about were generated primarily by Government. The rush, the mad rush, into synfuels which was generated by very unrealistic, medium-term projections of the price of oil, beliefs were reinforced by Government that the price elasticity in the demand for energy was zero and that we were going to see rates of increase—real rates of increase—in energy prices of 10, 15 percent, compounded out for the indefinite future, plus the prospect of a fair amount of Government subsidy if they guessed wrong.

I am one that strongly believes that there is an important role for the Government to be played in proving out what it would cost to develop synthetic fuels. It bothers me to see. first. the rush to embrace synfuels a few years ago. I was in the middle of that and trying to bring some sense to it. And now the rush to move away from it as fast as we can.

I think both were very shortsighted responses.

Mr. ROSTOW. I agree.

Mr. EADS. And it seems to me that a little bit more measured view, longer-term view of what the Government might do in this area is important.

But you talk about industry being shortsighted. If there's an institution in our society that is more shortsighted than industry, it is often government, in terms of embracing and running away from fads.

Mr. ROSTOW. A bit of humility is appropriate on both sides.

Mr. EADS. Both sides, yes. [Laughter.]

Mr. EISNER. I agree with Mr. Rostow very much on the importance of recognizing the role of unemployment and, for that matter, the tight money, in giving us an overvalued dollar. His example on petroleum substitutes troubles me because that's exactly the instance where I'm not sure we really have the ability to outguess the market.

I was in Australia last year and the Australians put in countless billions in trying to develop new sources of energy or redevelop old ones. My understanding is that those investments are largely down the drain with the change in oil prices. And maybe Mr. Rostow knows something I don't, but I'm not really sure that I can outguess all the oil industries' lesser monopolistic profits. If investors don't see it as worthwhile to invest in synthetic substitutes, I'd like to be sure that there isn't a risk that they perceive which is not a social risk—it is a social risk, you know, if the Government goes into this and it turns out that oil prices are such that they are not viable.

As Mr. Eads put it well, the difference is that the Edsels will eventually no longer be pursued. If the Government goes into it, it will go ahead and go ahead and go ahead and never admit its misguided allocation of resources.

Representative HAMILTON. We don't have anybody here this morning who is strongly advocating industrial policy. We've got to get some advocates of industrial policy. [Laughter.]

Mr. EADS. I thought you already had. [Laughter.]

Representative HAMILTON. Everybody's a skeptic out there this morning. [Laughter.]

Mr. Rostow, I noticed your emphasis on an incomes policy. You seem to stress in your conversation annual wage bargaining. Is that the central point of your incomes policy? Is that the key point?

What other things do you suggest for an incomes policy?

Mr. Rostow. Mr. Vice Chairman, as you know very well, and I'm quite aware of the statement that you made about incomes policy on behalf of the Democratic component of the Joint Economic Committee, I felt in writing this book that I had a responsibility to go beyond what many of my most thoughtful colleagues on both sides of the ocean are saying; namely, that there is no way out of the dilemma we face in democratic societies, unless we add to fiscal and monetary policy a long-term incomes policy.

I felt that, as an economist, we economists are not saying very much when we say that, because an incomes policy is not some economic gimmick that you can legislate and put into effect. I say at one point that it's a profound constitutional change and should be approached with the gravity of that. The essence of it is policitical and institutional.

And, therefore, in writing this book, I felt I had a responsibility to go beyond what at least anything I had read to describe how in the context of American politics, American institutions, the reality of labor and business attitudes, one could bring about in this particular society a long-term incomes policy with a change in the negotiating methods.

That is spelled out in my supplementary submission.

In essence, the Congress has one fundamental responsibility, which a group of us urged on it in the December 1980 session we had down here with the Joint Economic Committee: namely, that you put on the books, whether the President wants it or not, the 1970 amendment to the Defense Production Act of 1950, which gives the President power to implement wage-price policy.

Two, the President then must go to the country and he must be willing to put in his full stack, his full capital, to persuade the country that, without this kind of agreed change in the way we negotiate, we're not going to be able to sustain high rates of growth.

I say that it's not a job for a President, in the phrase that Teddy Roosevelt used to describe the German Chancellor in 1914, "who means well feebly." It's got to be an all-out, major commitment to see it through, and you've got to go and explain it.

Third, I think as a short-run measure we might have a wage freeze for a short period of time—I suggest about 90 days, if you like—you would not try to freeze agricultural and raw material prices. It would be a freeze on distributed dividends as well as wages for a short period. The reason for that would be to draw a line on the inflationary process.

But the critical element that I invoke here is what I call an EOB committee—a gathering of the key business, labor leaders, with some congressional representation, perhaps some citizens, under a very tough chairman, and I then give the agenda. The agenda, I do not try to forecast what they would agree because it has to be something that they have to live with. The headings for the agenda are general criteria for average national wage and salary increases and criteria for deviations from the average, the guideposts. A time and procedure for negotiating an average wage increase norm and a single, concentrated interval for annual industry negotiation within its framework.

Earlier in the chapter I describe how it's done in Japan, how it's done in Germany, in Austria. And what usually happens is you get an initial agreement. In Japan, it may cover, let us say, 50 percent of the wages in the country, and then in the wake of it the other wage agreements are made, in the spring, usually.

Fourth, and I think, my Japanese friends have emphasized this as equally important to the wage negotiations, that there be meetings, regular meetings. In Japan, it's three times a year—business, labor, and government—in which they do not negotiate, but they look at the performance of the national economy in terms of productivity increases, balance of payments, external inflationary pressures, whatever, that bear on the legitimate wage increase, so that when they gather in the spring, the negotiations are over a very narrow range. They know where they're going to end up.

The fifth is the criteria for either maintaining a constant aggregate share, as in Austria, between the distribution of wages and profits or an agreement, which I think may well be possible in the context of the present situation in the United States, that the proportion of income invested should be increased.

And the reason is that I think labor is quite conscious that the proportion of capital for labor workers has fallen in the United States and is worried about that.

Sixth, a procedure for monitoring prices in quasimonopolistic industry. And then recommendations for whatever legal and legislative basis for the arrangements that may be agreed.

But that is the kind of procedure which I suggest.

Representative HAMILTON. I will take a look at that, Mr. Rostow. The bells have rung to call us to vote. I'm afraid we'll have to conclude the hearing. I have a lot of questions that I would like to ask you, but we just have run out of time. Thank you very, very much for your contributions this morning. Nice to have you with us.

The committee stands in recess.

[Whereupon, at 12:17 p.m., the committee recessed, to reconvene at 10 a.m., Thursday, June 30, 1983.]

# INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

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**THURSDAY, JUNE 30, 1983**

Congress of the United States,
Joint Economic Committee,
*Washington, D.C.*

The committee met, pursuant to recess, at 10:05 a.m., in room 2168, Rayburn House Office Building, Hon. Lee H. Hamilton (vice chairman of the committee) presiding.

Present: Representatives Hamilton and Lungren.

Also present: James K. Galbraith, deputy director; Charles H. Bradford, assistant director; and Mary E. Eccles, William R. Buechner, and Mark R. Policinski, professional staff members.

## OPENING STATEMENT OF REPRESENTATIVE HAMILTON, VICE CHAIRMAN

Representative Hamilton. The committee will come to order.

This morning's hearing is the third in a series of six hearings by this committee on what can be done to improve economic growth and the competitiveness of American industry. Substantial economic changes, both here and abroad, have prompted calls for a different approach to our industrial problems. At yesterday's hearing, the committee considered a broad range of Government policies needed to sustain a strong and stable rate of growth. Today we'll examine what the private sector can contribute to this effort.

Reviving our rate of productivity growth must be a central focus of long-term economic policy. It's critical to our ability to control inflation and keep the economy's growth on track. We don't know all of the reasons for this country's productivity slow-down, which greatly complicates the job of reversing the trend. But there is evidence that the process will benefit from an improved relationship between business, labor, and Government at all levels.

From today's witnesses, we hope to learn more about the potential gains from increased cooperation between the public and private sectors, as well as the respective responsibilities of each.

We are pleased to have with us today Congressman Stanley Lundine of New York, our first witness. He has devoted a lot of time and effort to this problem and we look forward to his testimony.

He will be followed by Jerry Jasinowski, chief economist of the National Association of Manufacturers, and Robert Noyce, vice chairman of the board of Intel Corp.

Congressman Lundine, we're delighted to have you with us today. We appreciate very much your coming before the Joint Economic Committee with your testimony. Your prepared statement will be entered in full in the record, of course, and you may proceed as you wish.

## STATEMENT OF HON. STANLEY N. LUNDINE, A U.S. REPRESENTATIVE IN CONGRESS FROM THE 34TH CONGRESSIONAL DISTRICT OF THE STATE OF NEW YORK

Representative LUNDINE. Thank you very much, Mr. Vice Chairman, I will try to be brief so that you can spend most of your time in dialog with the private sector witnesses.

As you know, last month, the United States experienced a trade deficit of $6.9 billion, which was the largest deficit ever recorded in our history. We are in a desperate struggle to retain our industrial economic supremacy and we're losing that battle.

We emerged from World War II as the predominant industrial and economic power and in what could be one of the most exciting times in our history, we're faced with aging physical facilities, outmoded methods of production, and, as you indicated, some adversarial relationships that contribute to a deteriorating industrial economy.

Whether we're ready for it or not, I believe that we are in what could appropriately be called the second industrial revolution. We're in a global competitive market, particularly with competition between major industrialized trading nations.

I believe that a national industrial strategy is necessary to reclaim and maintain that lead. The U.S. economy has become internationalized. The entire strength of our economy depends on our competitiveness. The level of U.S. manufacturing imports and exports are 25 percent of total manufacturing production today, four or five times higher than in 1960. One out of every five manufacturing jobs depends on trade, and for every $1 billion we can increase our exports, between 30,000 and 50,000 new jobs are created in the United States. And yet, our competitiveness is slipping.

As you pointed out, our productivity growth is the lowest among all the advanced industrial nations. We've lost 3½ million manufacturing jobs in the last 3 years; 1.9 million of those, it's estimated, will not even return to their jobs with an economic recovery. Our world market shares have slipped in both basic industries and the emerging industries.

To take the latter, for example, in 1970, we had more than 67 percent of the world aircraft sales. Today, we have 53 percent. To take the basic industries, in 1970, we had more than 9 percent of the world's steel production. Today, we have 5 percent.

I think there are factors that are causing these slippages that the Joint Economic Committee and other committees of the Congress should look at very carefully. Aggressive, competitive techniques of trading nations, the high interest rates, deficits, and exchange rate problems here at home, and short-sighted, nonaggressive approach by our government and business have contributed to this slippage, in my view.

Our export companies are no longer in competition with just foreign firms in a free market. Those firms are backed by their governments and markets are heavily distorted. Targeting, trade barriers, dumping, and restrictive regulations are inhibiting a free flow of goods. And I think that while the United States participates in this, we are far from the major offender.

We are undergoing obvious structural changes in our economy. In 20 years, it is estimated that 5 million workers have become structurally unemployed.

For these reasons, I believe that we cannot do without a national industrial strategy. We must address these structural changes and these predatory practices and we must reclaim our stake in an international economy.

I'd rather not call it industrial policy because, to me, in the European and Japanese context, that connotes picking winners and losers. It connotes a government-orchestrated plan to move from one industrial type to another. But I do think that we have to make a coherent sense out of trade policy, capital investment policy, regulatory, such as antitrust policy, as well as human resource policies. Those have to make sense both for our industrial competitiveness as a whole and for particular industries, such as the semiconductor industry or the steel industry.

To do this, I have proposed the National Industrial Strategy Act, which is not more Government intervention; it's just trying to make sense out of what we're doing in this economy already. Its five basic components are:

One consensus—attempting to get business, labor, Government and others in the public together and develop a consensus so that we can negotiate the requisite sacrifices and policy changes of each in order to make sense out of this situation.

Second is to get credible facts about our competitive position on an industry-by-industry basis. We don't even have a handle on where our industries are going and why they are. I think, as Members of Congress, we can understand so often people come at us with a different point of view and they have different facts. I think that's true of the international trade area. Companies—an industry comes in with one set of facts and the importers come in with another set of facts.

It's time that we got together and at least got a consensus on the facts.

Third, a component of my proposal would be the fostering of sectoral, industrial strategy councils. I think that this can work on an industry-by-industry basis and that they can come up with some useful ideas. Finally, this would lead to a strategy, not a plan. It would be advisory only. But the economic cooperation council that I propose would do for industry much like the synergistic relationship between Government, business, and agriculture that has made us the most highly productive in the world, much like the business-Government partnership in space.

There are many industries that have benefited from this kind of a partnership in the past—aluminum, rubber, and semiconductors, to mention just a few.

And finally, I do propose a financing mechanism to provide patient capital, both for basic industries and for some of our emerging industries. Rather than wait for a crisis to happen, like Chrysler, I think we should be anticipatory. I don't think that the Government investment should be predominant. It should only serve as a catalyst to attract the private capital commitments that are necessary to achieve a world class steel industry and maintain our lead in computers and other industries of the future.

This approach is not a panacea and it is particularly important that this committee examine the relationship between industrial strategy and macroeconomic policy.

I, personally, believe that we need a more stable macroeconomic policy. We need to stop taking zig-zags and trying to come up with tax breaks for every purpose that we have in our economy and in our society. We need a stable, predictable monetary and fiscal policy. We need a national accord, in my judgment, to get budget deficits down. We need a stable expenditure on defense and on research and development so that we can plan and program it accurately.

I happen to think in the macroeconomic sense we would benefit from tax reform, so that people would make investments based on the expected return rather than on what kind of a shelter they can achieve.

But, in my judgment, no matter how progressive, no matter how successful this macroeconomic policy is, it should be combined with an industrial strategy. It should probably be combined with other programs in education and worker reskilling and other particular programs. But I do believe that an industrial strategy should be the center piece of an economic growth program for the 1980's. I think that the bill we have introduced is probably the state-of-the-art in this area. But it's not perfect and I welcome constructive criticisms from this committee and from the witnesses that will appear before it.

I thank you very much for your time and for your consideration.

Representative HAMILTON. Thank you very much, Congressman Lundine. I want to say that I think that your statement is thoughtful and constructive and it addresses the policy issues that are before us in a refreshing way.

[The prepared statement of Representative Lundine follows:]

## Prepared Statement of Hon. Stanley N. Lundine

The United States is involved in a more intense international competition than ever before, and we are losing. Whereas this country emerged from World War II as the preeminent industrial and economic power in the world, we now find ourselves being challenged on all fronts. Rapid changes in the world economy and in technology are going on all around us, and yet, in the midst of what could conceivably be the most exciting time in our economic history, we find ourselves faced with aging factories and noncompetitive methods of production. Competing nations are using the technologies that we have developed, while our factories struggle with out-dated processes.

Ready for it or not, we have entered into the Second Industrial Revolution, which is coming upon us faster and with even greater impact than did the first. This revolution is characterized by aggressive international competition and global interdependency between trading nations. I believe that a national industrial strategy is absolutely essential if we are to regain and maintain the lead in the very intense competition in which we find ourselves.

The U.S. economy has become internationalized to the point where the entire strength of our economy depends on our international competitiveness. The levels of U.S. manufacturing imports and exports, for example, are nearly 25% of our domestic manufacturing production, four to five times higher than they were in 1960. One out of every five U.S. manufacturing jobs depends on trade and for every $1 billion in exports, 30,000 to 50,000 new jobs are created in the U.S. Both the extent and the rapidity of the internationalization of our economy has been dramatic.

Yet even as our stake in international markets grows, our competitiveness is slipping away. U.S. productivity growth is among the lowest of our industrial peers. In the last three and one-half years, we have lost 3 million jobs in manufacturing alone, 1.9 million of which will not come back even with an economic recovery. Our trade deficit may reach $70 billion this year, after a record setting $42 billion deficit in 1982. From 1970 to 1980, U.S. world market shares have slipped in both basic and emerging industries. In 1970, the aircraft industry, for example, held 67.3% of the workd aircraft export market. In 1980, it held 53%. Similarly, in 1970, the iron and steel industries held 9.2% of the international iron and steel markets. In 1980, they held 5%.

Many factors have caused these market slippages, including the aggressive competitive techniques of other trading nations, high interest rates and deficits here at home, as well as the short-sighted, non-aggressive approach to trade that government and business have taken in this country.

While some nations have boldly entered into the new international industrial competition and are making great gains in terms of market shares and their balances of trade, the U.S. continues to follow policies and competitive techniques that are just not strong enough, or relevant enough, to match our international competitors.

Our exporting companies are no longer in competition with foreign companies in a free market. Instead, they compete with foreign companies backed by their own governments in a market that is heavily distorted by targeting, trade barriers, dumping, and restrictive regulations. Macroeconomic policies alone, no matter how sound, cannot deal effectively with the aggressive competitive techniques of other trading nations.

At the same time that we are losing international markets, we are experiencing powerful structural changes that are leaving us with millions of structurally unemployed workers. From 1964 to 1983, our full employment rate during the height of the business cycle has moved from 4% to from 6 to 8% unemployed. In 20 years, 5 million workers have become structurally unemployed. This is one of the most significant changes that has occurred in our economy, and traditional macroeconomic policies are simply not equipped to bring us back to 4% full employment when faced with such massive structural changes.

Faced with the structural changes in the last 20 years, the predatory practices of our competitors, and the urgent need to maintain our international competitiveness, the U.S. cannot do without an industrial strategy; one which will replace the ad hoc, inconsistent patchwork of policies that are currently hindering the ability of our trading firms to compete effectively.

Even as the long-awaited recovery begins, our trade and structural problems will remain. What the U.S. needs is healthy industry and a national industrial strategy is an essential element in achieving that goal.

Together with Dave Bonior, Dick Gephardt, and Tim Wirth, I have proposed the National Industrial Strategy Act, H.R. 2991. An industrial strategy, as I have proposed it, will not direct the market, but will allow the market forces to operate with fewer impediments than before. I am not calling for more government intervention in the market, but for a focused, coordinated approach to the myriad of policies that we now have. I believe that a national industrial strategy and sound macroeconomic policies should complement each other in ways that will stimulate research and development as well as capital investment, and that will remove many of the regulatory roadblocks that U.S. businesses must overcome.

There are five basic components to a positive national industrial strategy.

First, and most importantly, a sound industrial strategy must be based on consensus. It would be totally inconsistent with the American system to ask Big Government, Big Business, and Big Labor, or any small group of individuals to make the basic decisions concerning our economy. I have proposed a quadripartite Economic Cooperation Council, based on my belief that America's interests will be best served if business, government, labor, and the public interest are equally represented in the decision-making process.

By involving all the major stakeholders in our society, the ECC will be in a position to extract committments in return for governmental assistance. Rather than the "give-away" programs we now have, where the federal government grants tax credits, guaranteed loans, and forms of protection and gets nothing in return, the American people should be assured that if assistance is given, greater productivity and investment will result. In the same way, if an industry takes high risks and invests in productive capacity, it should have access to a better source of long-term capital.

We must begin these sorts of give-and-take negotiations if we are to ever move away from our shortsighted fixation on quarterly profits, the next labor contract, and the next political election, and toward a longer-term view of returns in the form of higher productivity, capital investment, and innovation.

Second, one of the most important functions of a national industrial strategy should be to develop a clear view of what our trade and economic positions really are, what areas of the country really need help, and where our biggest problems, as well as our greatest strengths, lie. We currently find ourselves in the situation of not even knowing or agreeing on the status of our industries with respect to their foreign competitors or the areas of opportunity for the dislocated workers in this country. On every issue, different sources present different facts to support their own cases. Without a consensus on the facts, we can't even hope to develop sound programs for revitalizing our industries and for getting our laborforce back to work.

It seems ironic, indeed, in this nation of instant communications and information gluts, that the largest impediment to retraining and reemploying the workers in this country is a lack of employment data. Unemployment is one of the most serious problems we face, and yet we have no national information on available training programs andjob opportunities. An Economic Cooperation Council can provide this type of information, making possible programs that will match workers and job opportunities and reskill workers to meet the needs of emerging industries. Compare this to our current training programs that cost us $40 billion annually and still leave us with over 11 million people looking for work.

Neither should all our efforts go to helping industries that have been hurt by international trade or structural changes in our economy. We should also help our efficient, competitive industries to improve their competitive positions and to make the necessary transitions as we become a more technical society.

I believe that we should develop strategies for individual sectors of the economy and coordinate these strategies into a national industrial strategy. For this purpose, I recommend the development of consensus-based sectoral industrial strategy councils. These councils, like the Economic Cooperation Council, would be equally represented by leaders in business, government, labor, and the public interest and would suggest industrial strategies to the ECC for specific industry sectors. The ECC would develop these strategies into a consistent national strategy and point out possible linkages between mature and emerging industries. This would encourage our basic industries to utilize the innovations of our high tech industries in order to remain competitive in international markets and encourage our high tech industries to move their innovations into commercial applications more quickly.

Fourth, it is imperative, if the U.S. is to have an industrial strategy which it so badly needs, that it be a strategy, not a plan, and that the recommendations in the strategy be advisory only. I am not in any way suggesting that we adopt MITI to the U.S. market sustem. Whereas MITI produces a plan for the Japanese economy and chooses the top 20 firms for the next decade, the ECC, as I have proposed it, will concentrate on our most important industries, both basic and emerging, and recommend strategies that follow the market forces.

The recommendations of the ECC would be advisory only. Industries would not be required to approach the ECC and its accompanying bank or to follow its recommendations in any way.

The goal of the national industrial strategy would not be to influence the market, as it is in Japan, but to streamline our policies and provide better information to allow the market to work more effectively.

There is a mistaken notion, I think, that a national industrial strategy is inconsistent with the American free enterprise ethic. This is simply not true. We have had an "industrial" policy for our agricultural sector for over 100 years. This industrial policy has benefitted the agricultural industry in this country from the time of land grant colleges and the Homestead Act to crop research grants and infrastructure improvements. With government involvement, not in spite of it, the agricultural industry has become a technological, efficient industry and has experienced amazing productivity growth.

Similarly, industrial policies have aided the aluminum, rubber, and semiconductor industries in this country. Even NASA started as an industrial policy effort under President John F. Kennedy. We are now beginning to realize the almost limitless commercial possibilities of efforts in space.

Fifth, without a financing mechanism, it is unlikely that an industrial strategy will produce results. We'll end up with plenty of good suggestions for revitalizing our industries and no way of implementing them. I propose a Naitonal Industrial Development Bank to provide patient capital for high risk, high technology industries and to provide guaranted loans and additional capital for restructuring our basic industries. The Bank would act to complement and stimulate, not to compete with, private capital markets.

The U.S. has no private source of long-term patient capital for research and development and high risk investments. As a result, investment capital goes for relatively safe projects with short returns and small high technology firms often must be sold our to larger corporations at the second stage of development. Both of these results stunt innovation and technological advancement.

A government source of patient capital, however, would open the door to levels of productivity that we've never seen before in this country. Other industrial countries provide this sort of government assistance very successfully. Japan's semiconductor industry has become the world leader in high memory chips with the help of government seed money in the form of guaranteed loans.

Basic industries, such as steel, autos, and machine tools, are equally important to out economy, but restructuring and revitalizing these linkage industries will not occur without government guarantees. Because of the public return on investment without commensurate private return and the amount of capital required for restructuring, private markets are not able to meet the capital needs of our basic industries.

We cannot let these industries continue to sag, pulling the rest of the economy down with them, and finally reaching a crisis point, as Chrysler did. Although Chrysler is an excellent example of how public and private efforts can join together to revitalize an industry with everyone, including the American taxpayer, benefitting, we should not wait for crises to occur. We should anticipate changes and needs, rather than react only to crisis situations.

We have seen that tax breaks alone are not effective enough in stimulating investment in industrial revitalization. The National Industrial Development Bank, on the other hand, would grant loans and assistance only in exchange for industry and labor committments that greater productivity and competitiveness will result from government participation. Requiring private financial committments will also prevent the Bank from becoming a "bail-out" mechanism.

An industrial strategy developed by an Economic Cooperation Council and carried out be a National Industrial Development Bank, is I believe, the appropriate mechanism to restore American industry to international competitiveness and to put Americans back to work. We must take aggressive action to meet the intense competition of the global economy. We must take steps to revitalize our industries and to allow industries that are strong competitors in international markets to continue to compete effectively, without the hindrances of insufficient capital availability and inconsistent and out-dated government policies.

An industrial strategy can help create a comparative advantage for the U.S. As a direct result of the increased mobility of capital, labor, and technology, the United States has lost the advantage that it once had. By focussing on our strengths and directing our resources to productive and competitive investments, we can build a competitive edge, as Germany and Japan did after World War II.

A national industrial strategy is essential to getting American industry back on its feet, but it is not a panacea. An industrial strategy is a conscious set of microeconomic progrmas to reallocate resources in our economy. It is not, however, a substitute for macroeconomics. A good industrial strategy will need to be coupled with sound macroeconomin policies and effective, coherent progrmas if our economic problems are to be fully addressed.

We need to rethink our current penchant for continual changes in the direction of our macroeconomic policies. Industries need stable fiscal and monetary policies on which to base their investment and productivity decisions. We should begin to take a longer view of our economy and to strive for macroeconomic stability if the market is to be allowed to operate more freely and with some modicum of predictability.

In the same way, we should avoid rapid changes in discretionary spending. For example, our current fluctuations between massive spending for defense progrmas under one Administration and much lower levels under another are inherently inefficient. Efficiently run programs require a stable level of continual funding, not the start and stop approach that we have now.

These fluctuations also make long term investments extremely risky. With no assurance of how public spending, inflation, and interest rates will change even from one year to the next, the private sector if effectively forced to assume short term goals in making investment decisions.

It is also very important that we find ways to decrease the deficit and control spending levels as the economy begins to recover. Our entitlements programs are one area where spending must be controlled. Many of these programs are extremely valuable and should be continued, but we should also look for ways to meet our needs through more stable, longer term programs.

In research and development, defense, education, labor, and other programs, we should aim for sustained long term spending committments. Only then will our industries be able to make wise, long term investments with confidence.

A new institutional mechanism is needed to address the problems of the 1980's. Our traditional policies are no longer effective against the trading techniques of our competitors in international markets and against the structural unemployment problems that have resulted from this period of transition.

Our economic problems are so deep and so complex that no one policy or program will solve them all. Not even the wisest macroeconomic approach can solve them alone. We need a combination of sound, stable macroeconomic policies, stable spending and tax policies, resulting in lower deficits, and a national industrial strategy to coordinate our policies, allocate resources to productive investments, and make our economy work again.

A national industrial strategy is an aggressive way for us to regain our competitive advantage and our international competitiveness without resorting to the easy, but unproductive path of protectionism. Without an industrial stategy, our trade and domestic policies will effectively be formed by the industrial policies of foreign trading nations.

With a flexible national industrial strategy, we can meet the challenges of the '80's. We can bring government, business. labor, and the public together to find solutions to our problems and to find ways to develop our strengths. We can find effective ways to put the millions of dislocated and structurally unemployed Americans back to work, without resorting to make-work programs. And we can put this country back into the international market as a strong and aggressive competitor.

Representative **Hamilton**. Congressman, I'm not sure what your time constraints are. Do you have time for a few questions?

Representative **Lundine**. Sure.

Representative **Hamilton**. One of the sentences that stood out in your prepared statement was, where you said rather than the giveaway programs that we now have, if the Government is going to grant assistance—I'm just paraphrasing it—that there ought to be an assurance to the American people that in return for assistance, we are going to have more productivity and more investment.

How do you get that kind of assurance? What should we do to assure that we get that assurance?

Representative **Lundine**. Well, I think that's precisely why we need a new institutional mechanism. I propose something that I call an economic cooperation council with equal representation from business, labor, government, and the public, because today, if the specialty steel industry, for example, which is a very high technology component of our overall steel industry, comes in and asks for some trade protection, there's no way to really negotiate, as we did in Chrysler's case, some kind of a reverse commitment. And I think an economic cooperation council would be a useful tool for, say, in this case, the administration. Just refer it to them for a recommendation.

Then as I envision it, they would bring industry, perhaps labor, some others with interests together and they'd say, look, if we're going to give you 5 years of quotas on specialty steel, what are you prepared to promise in terms of investment? I mean, you don't have as much continuous casting as some other foreign competitor, that kind of thing.

I think they'd work out a program of general agreements and commitment.

Representative **Hamilton**. Would there be any sanction? Suppose the industry didn't do it.

Representative **Lundine**. Well, then, if the industry said, no, we didn't want it——

Representative **Hamilton**. Then they wouldn't get the money?

Representative **Lundine**. The economic cooperation council would only report back to our trade officials that they do not recommend any program of import relief because they don't see that it will accomplish our goal.

Three times in the last 12 years in the general steel industry we've given major import protection and, clearly, we have not received any investment back from it.

Representative **Hamilton**. And if the industry agreed to the improvements that the council suggested, but then didn't follow through, I presume the council would recommend that the favor be discontinued.

Representative **Lundine**. I imagine that what you would do is work out an absolute, predictable—if it is trade protection that you're talking about, you'd have, say, a 2-year period that was an absolute commitment because there are those lead times in terms of investment and everything. And then you would have it renewable for the next 3 years, and depending really only on their meeting their commitments.

Representative **Hamilton**. Now, you indicated that you don't want to pick winners, but, in effect, wouldn't the bank you recommend be picking winners by providing capital or guaranteed loans or additional investment?

Aren't they going to make a choice here between this industry and that?

Representative **Lundine**. Of course. Let me define what I mean by picking winners. In Japan, the Japanese Ministry of International Trade and Industry actually produces a 10-year vision of which industries they are trying to promote and target for, and they will also produce reports indicating which industries they are trying to phase out of.

In a diverse economy such as ours, I propose no such central plan for which industries are going to be sunrise and which are sunset. I think the market mechanisms do that. I do think that we must concentrate on a few industries and they do range, incidentally, from what you would call most smokestack to most information-oriented, maybe from steel to computers, if that's an appropriate separation.

And what I think we need is sort of an overall strategy. It's easier to use steel as an example, because it's so prominent. As I envision it, the economic cooperation council, through a subgroup, with the equal representation, would say, to have a world class industry, it would be nice if we built one new Greenfield steel plant, if we rationalized our industry and promoted minimills by these kinds of policies.

That would just be a general strategy.

Now if United States Steel didn't want to come to the bank, there's nothing compelling them to. But if Bethlehem Steel proposed, in a report "* * * we think we can raise $6 billion in private capital if we could get a $2 billion Government guarantee * * *," or something like that, they could then come to the bank and that bank could pick from among, hopefully, several companies who might come in with similar proposals. They would pick, as any other bank does, which companies they thought were viable, and whose proposals were consistent with the overall strategy. However, I don't think you would want to say "we are emphasizing computers and not emphasizing steel." I think you would be trying to promote and foster diversity that, in fact, is the greatness of the American industrial economy.

Representative **Hamilton**. But the company that would accept the strategy of the bank would be the company that would be favored with the guaranteed loan or whatever.

Representative **Lundine**. Yes, just as we favored Chrysler. I mean, we made a conscious decision when that came that we were not going to allow the U.S. industry to strengthen itself by having two automobile companies, that it was better to go along with the Chrysler proposal and have three.

Representative **Hamilton**. Who would run the bank? How is it structured?

Representative **Lundine**. I would propose to have 16 directors—again, 4 from each of those sectors. Eight would be appointed by the President on the recommendation of the Congress. Four would be appointed by the council from their own membership, so there's a linkage of four directors, and four would be appointed by the President on the recommendation of the Federal Reserve Board.

The reason I wanted to do that is to have some linkage to the private banking system. I do not want this replacing our private capital markets, but only enhancing it and serving as a catalyst.

Representative **Hamilton**. What kind of funding do you envision?

Representative **Lundine**. I propose that the bank be capitalized over a 4-year period at $12 billion. I further propose that they be allowed to enter into agreements to guarantee loans of twice that amount, over a period of time, of $24 billion.

I envision after the first 4 years that this bank would operate on a pay-as-you-go basis, in the industrial sector, much like FNMA does in the housing area—that they will be able to then issue their own bonds. And I don't see this as a subsidy mechanism, particularly. I think that at the Government's ability to borrow, patient capital can be provided.

Representative **Hamilton**. Your first point in the five components relates to consensus. What is the consensus-building mechanism in your proposal? Is it the councils that you referred to?

Representative **Lundine**. Yes.

Representative **Hamilton**. And you have a national council as well as a number of local councils; is that the scheme of things?

Representative **Lundine**. No. We're not proposing local councils because there's nothing inhibiting their development now. What we're proposing is an overall national council comprised of 20 people. But we would propose sectoral, I mean industry-by-industry, councils that were similar. And presumably, the industry would come up with things that made sense for that industry and the overall council would look at it and determine whether or not there was any conflict between the various sectors.

But the way I envision this as working somewhat along the lines that we've seen work with the Social Security Administration. You did have there a crisis of a one-time nature. But I really believe that if you, in effect, get these people, leaders, together and say, "we're removing it one step from the political process, but you don't have power except as you're factual and you look at things very objectively and report back to us," and, in effect, close the door and allow them to argue their points out and to try to figure out what kind of sacrifices need to be made.

I think the outcome of that will not be the lowest common denominator. I really believe that it's possible for American business and labor, for example, considered adversaries today, to get together and say, these are the kinds of things we think need to be done.

Representative **Hamilton**. I know you've had some personal experience with that in your own community—I think, Jamestown, N.Y.

Representative **Lundine**. Yes, that's right.

Representative **Hamilton**. So you speak with not only some conviction on it, but some experience as a result of your work there.

Well, you've given us some challenging statements. I really have a lot of questions for you, but I'll not keep you any longer. I have very much appreciated your coming today. Thank you very much.

Representative **Lundine**. Thank you. I appreciate the opportunity to appear.

Representative HAMILTON. I'll ask the other witnesses to come forward, if they would, please.

I'm very pleased to have Jerry Jasinowski, the chief economist of the National Association of Manufacturers, with us, a former associate in this committee. Nice to have you back, sir, before us. And Robert Noyce, the vice chairman of the board of Intel Corp.

Mr. Jasinowski, if you would, we'll begin with you. Your prepared statement, of course, is before us and has been entered into the record in full. That's a good, long statement that you've got there, and we would appreciate it if you would summarize it for us. And then after you've completed your statement, we'll turn to Mr. Noyce for his statement. Then we'll direct questions to both of you. So, please proceed as you wish.

## STATEMENT OF JERRY J. JASINOWSKI, SENIOR VICE PRESIDENT AND CHIEF ECONOMIST, NATIONAL ASSOCIATION OF MANUFACTURERS, WASHINGTON, D.C.

Mr. JASINOWSKI. Thank you very much, Mr. Vice Chairman, and thank you for those kind remarks. It is a special privilege for me to be back before this committee for whom I worked a number of years.

I am Jerry Jasinowski, senior vice president and chief economist of the NAM. The statement is a rather detailed analysis of the causes of our industrial deterioration, and represents one of the more complete ones that has been done, Mr. Vice Chairman. It is meant for you and the staff and others to look at, to the extent that there is time and inclination to do so.

I'd like to summarize my main thesis and then turn to eight conclusions that fall out of that analysis.

My main thesis is that an understanding of the causes of industrial deterioration is essential if the correct policy solutions are to be implemented. Recently, any number of industrial policy solutions to our current economic problems have been proposed, but more often than not, those recommendations have been based on very little understanding of the causes of our industrial deterioration.

The result is that these policy recommendations that have been put forward so far must be viewed with a high degree of skepticism since it is not clear that they tend to address the causes.

Now without going into the underlying analysis in summary, Mr. Vice Chairman, my prepared statement concludes that there are four categories of causes for our industrial deterioration. One, a more volatile business cycle characterized by deeper, more frequent recessions than we had during the 1960's and in conjunction with extreme financial volatility.

Two, an erratic export performance, which has exacerbated business cycle fluctuations. This has been accompanied by a loss of international competitiveness due primarily to the overevaluation of the dollar, and to other reasons having to do with our productivity, our unit labor cost, and other longer term factors.

Three, a certain number of structural problems which are enumerated in my prepared statement, which also relate to our productivity and have affected what the economists tend to call potential GNP. And these run all the way from energy through capital investment, regulatory impediments, and so forth.

And finally, corporate factors which have worked against a market adjustment and business efficiency. In short, corporations have not in all cases shown the degree of good management that was necessary to deal with the kind of economic change that was taking place.

Table 1 of my prepared statement summarizes those causes in more detail; the bulk of the testimony deals with an analysis of these causes.

The conclusions I draw from this rather comprehensive analysis, Mr. Vice Chairman, is the following eight points:

One, it is now generally acknowledged that the performance of the American economy and industry has deteriorated both domestically and in world markets. Major signs of decline include lost domestic and international market share, poor productivity performance relative to our competitors, inadequate capital formation, decreased employment opportunities, and a weakened financial and profit picture, both in the short and long term.

This deterioration reflects both public policies and inadequate corporate performance, and is the result of the four causes I previously outlined.

Two, in the industrial policy literature, there is as yet no clear relationship, as I said before, between the causes of a decline and the proposed solutions. On balance, most of the proposed solutions that can legitimately be defined as industrial policy are largely irrelevant to the problems facing American industry.

Three, having said that, it is important for me to clarify the objectives and techniques, and the meaning of the term "industrial policy." Table 2 in my prepared statement provides a comprehensive list of every conceivable objective that industrial policy could have. From a practical point of view, a substantial number of these objectives are either too broad, are better served by other policy techniques, such as monetary and fiscal policy, or are likely to impede industrial performance rather than improving it. And if industrial performance is not improved, it seems to me that we are missing one of the fundamental criteria for what makes for good policy, be it industrial policy or not.

I then go on in that point, Mr. Vice Chairman, to simply say that you can define industrial policy any way you want to, and the committee ought not to spend an inordinate amount of time on definition because it is a matter of choice.

The two most common choices are to use the European notion of the word, which is that it is some form of government intervention in particular sectors or industries. Or to use a somewhat broader definition, which is to say any range of policy techniques that operate on the broad supply side or through functional policy categories that cut across numerous industries, or by specific sector and firm intervention.

Conclusion No. 4 is that having talked about the causes and the definition, the principal cause of our industrial deterioration today is the greater volatility of the business cycle and the financial conditions that I mentioned earlier. The necessity of stabilizing business cycle fluctuations is not a policy priority to which industrial policy is relevant. But, nonetheless, this represents an area, in my opinion, the most important area, for the Government to manage economic growth. And I would argue that if we were to get our fiscal policies straight, at this point not only would we have a recovery that is growing in strength, but a sustainable recovery which would take care of the bulk of the industrial problems facing U.S. industry.

And in that point, it seems to me that it's clear yet that we do not have the proper mix of monetary and fiscal policies; in particular the large deficits are a major obstacle to recovery.

Conclusion No. 5—Industrial policy is not readily suitable to corporate factors. There are a number of books written about what's wrong with American corporations. Much of the analysis is quite accurate and good. The conclusions that are drawn from the analysis of corporate deficiencies in many cases amaze me because they then assume that there is some public policy response for these deficiencies and have grandiose industrial policy schemes to address what really requires more basic, improved management by American corporate leadership, which I think they're prepared to do and which I think current books like the book, "In Search of Excellence," in fact, indicate some firms are doing.

So I think we ought not to pretend that corporate management has not some part of this problem to share. Nevertheless, it is, in my judgment, a grave error to think that there is a public policy solution to corporate problems, although I think some of the rest of my statement indicates that the system of incentives that we have created through perverse Government policies, in fact, cause the kind of corporate behavior we've had.

Conclusion No. 6—One area in which the term "industrial policy" may be more applicable is longer term structural problems where the existing ad hoc industrial policies impede economic performance or set up the perverse incentives that I spoke about earlier.

The proper mix of policies in this area, however, should consist of what I call positive adjustment policies designed to aid in market adjustment and improve the function of existing markets.

The fact of the matter is that we have had an ad hoc industrial policy in this country for a long time. Because of its unsystematic nature, its elements are frequently in conflict with each other. And it is a major impediment toward our functioning well at home and abroad. If you look in the international area, you find in many cases we are simply shooting ourselves in the foot rather than doing the kinds of things that the Japanese and the Germans and others are doing.

In this area, it needs to be emphasized that we need to reduce the role of Government or, at the very least, rationalize it so that the market can operate efficiently and adapt to economic change.

Conclusion No. 7—There should be, however, no Government intervention in particular industrial sectors or firms, unless this is necessitated as a matter of extreme national priority, such as national security.

There is no record of major successes in this country or elsewhere in the area of industrial intervention, although there are exceptions that are always cited about where the Government has been involved in individual sectors where this has yielded great benefits. In general, what happens, and this is documented very clearly in the European literature. is that you shore up industries that are not making the kinds of adjustments necessary to deal with the changing world economy.

Conclusion No. 8—All of the debate, in my opinion, is most relevant to the international trade area. This is an area where there is substantial room for additional policies to improve our trade performance, although I think a proper definition of industrial policy would not have the kind of policy responses labeled as industrial policy. Nevertheless, one could, under a very broad definition, suggest that some of the trade policies being considered are part of an industrial policy.

The policy options in this area include the creation of a department of international trade and industry, increased funding for the Eximbank, the maintenance of DISC-type incentives, the encouragement of joint R&D ventures, greater use of export trading companies, strengthening of our trade import laws in areas such as the 201 provision, and reducing regulatory impediments associated with the Export Administration and Foreign Corrupt Practices Acts.

These measures, in my opinion, in conjunction with sensible monetary and fiscal policies, would go a long way toward improving our international competitiveness and would, as you would note, take care of three of the categories of industrial problems that I have identified.

In sum, Mr. Vice Chairman, the industrial policy debate is a positive development because it attempts to address and understand some of the Nation's major industrial problems and this and other committees should be commended for the attention that it has given to this important question.

Most industrial leaders are skeptical, however, in my opinion, because the proposed solutions often do not address the real problems facing industry and some of the solutions call for what appear to be unjustified Government intervention in the marketplace.

Still, given the challenges that industry faces on a worldwide basis, now is not the time for dogmatism from any quarter. The NAM has not taken any formal positions on many of the industrial policy solutions that are being discussed. In general, we would oppose proposals that would substantially increase the degree of Government intervention in the economy because many of our industrial problems stem from policy mistakes in this area.

At the same time, we would support those policy options that strengthen industrial performance by relying primarily on improving the functioning of the marketplace, even if, in some cases, it means difficulties for business as a result.

Having said that, there may be new forms of government-industry cooperation that could improve industrial competitiveness, particularly in the international area. We haven't examined every idea and every thought and we ought not to pretend that we have. We welcome the possibility of engaging in the debate in which those ideas will be discussed and reviewed.

Thank you very much, Mr. Vice Chairman.

Representative HAMILTON. Thank you, Mr. Jasinowski. Your statement certainly makes a contribution to that debate. It is very comprehensive, as you suggested, and will be exceedingly helpful to us.

[The prepared statement of Mr. Jasinowski follows:]

## PREPARED STATEMENT OF JERRY J. JASINOWSKI

I am Jerry Jasinowski, Senior Vice President and Chief Economist of the National Association of Manufacturers (NAM). The NAM's 13,000 members represent 80% of the nation's industrial production and 85% of its industrial workforce. We are pleased to have this opportunity to present our views on the major causes of industrial deterioration in the United States, as part of the emerging debate on industrial policy. This statement will consist of a summary of my main conclusions, followed by a more detailed analysis of the major causes of industrial deterioration and decline.

### I. SUMMARY

An understanding of the causes of industrial deterioration is essential if the correct policy solutions are to be implemented. Recently, any number of industrial policy solutions to our current economic problems have been proposed, but frequently these recommendations have been made on the basis of inadequate or incomplete analyses of the causes. The result is that these policy recommendations must be viewed with a degree of skepticism, since it is by no means clear that they address the actual causes of our industrial problems.

This statement summarizes my analysis of the major causes of industrial deterioration in the United States. My thesis is that there are four types of causes: 1) a more volatile business cycle characterized by deeper, more frequent recessions and extreme financial instability; 2) an erratic export performance coupled with losses in international competitiveness; 3) longer term structural problems, particularly those adversely affecting the trend rate of productivity growth; and 4) corporate factors which have worked against market adjustment and business efficiency. Table 1 (below) provides a concise summary of these causes and their major components; the main text of my statement analyzes the causes in greater detail.

The greater volatility in the business cycle can be seen in the series of reflationary booms during the 1970s followed by prolonged, acute recessionary periods. The result was that since the early 1970s there have been two major recessionary periods, consisting of three distinct downturns in 1974-75, 1980 and 1981-82, which overall have been unusually severe by postwar standards. These cycles have also been characterized by an extraordinary degree of financial instability, which is particularly manifest in the exceedingly high level of interest rates experienced during the recessions. The performance contrasts unfavorably with the experience during the 1960s, when the economy underwent eight years of continuous growth, and the recessionary periods were comparatively mild.

At the same time, the performance of American industry in international markets has been erratic, consisting of periodic booms that were followed by serious losses in competitiveness and subsequent contractions in manufactured exports. American trade competitiveness also suffered from the effects of fluctuations in the exchange rate, differentials in the gorwth rate of unit labor costs and productivity, differentials in the growth rate of domestic aggregate demand, and inadequate export promotion policies. The net result was that the United States was not able to increase its exports of industrial goods as rapidly as the other industrial countries, and as a result underwent a gradual loss in global market share. There has also been a long-term deterioration in the American share of the domestic market.

Third, apart from the cyclical components of the decline, there have been a series of longer run structural problems, which have contributed to a lowering of potential GNP, and which are also manifested in a deterioration in cyclically adjusted productivity growth. These structural problems include external factors such as the change in relative energy prices, but also comprise domestic factors such as deterioration in the capacity to invest, a worsening of the financial profile of industry, decreases in research and development spending, and the diversion of capital and resources into regulatory compliance activity.

Finally, a fourth element has to do with corporate factors. At the single firm level, the slowness of corporate bureaucracies to respond to the opening up of the economy as well as other major changes in the environment contributed to the failure of American firms to penetrate export markets, while pervasive rigidities in wage settlements have prevented wage-price cycles from equilibrating downward during disinflationary periods, resulting in a major upward cost bias. At the same time, there has been insufficient emphasis on improving productivity at the single firm level. It should be noted, however, that the recent prolonged recession has been a major incentive for corporations to correct these deficiencies.

With respect to industrial policy specifically, the major conclusions of this statement are as follows.

1. It is now generally acknowledged that the performance of the American economy has deteriorated, both domestically and in world markets. Major signs of decline include lost domestic and international market share, poor productivity performance relative to our competitors inadequate capital formation, decreased employment opportunities, a weakened financial condition and a decline in real profitability. This deterioration reflects both poor public policies and inadequate corporate performance.

2. In the industrial policy literature, there is as yet no clear relationship between the causes of the decline and the proposed solutions. Because of the lack of a strong theoretical justification, industrial policy solutions have tended to be advanced on an ad hoc rather than a systematic basis. The discussion of the causes of the decline in this statement is therefore intended to more clearly delineate those components of the decline which may be addressed through industrial policy, and those which are not amenable to industrial policy solutions. On balance, most of the proposed solutions that can legitimately be defined as "industrial policy" are largely irrelevant to the problems facing American industry.

3. We also need a clarification of the policy objectives and techniques of industrial policy. Table II (below) provides a comprehensive list of theoretical industrial policy objectives, which we do not endorse, but are cited for discussion purposes. From a practical point of view, a substantial number of these objectives ought to be disregarded as too broad, better addressed by other policy techniques, or not likely to improve the performance of industry, which in the final analysis should be the fundamental criteria

for analyzing whether a particular policy improves industrial performance. With these boundaries in mind, a broad interpretation of industrial policy can be any set of policy techniques designed to improve the growth performance of industry, either on a broad supply-side basis, or through functional policy categories that cut across numerous industries (eg. trade and regulation), or by specific sector and firm intervention. A technically more correct definition of industrial policy in keeping with the European sense of the word would be policy techniques that directly increase the degree of government intervention in particular industries.

4. The principle cause of our industrial deterioration is the greater volatility of the business cycle and financial conditions. The necessity of stabilizing business cycle fluctuations is not a policy priority which is amenable to industrial policy, but nonetheless this does represent an area in which there is a role for the government in managing growth. The recovery that is currently underway will significantly improve the overall health of American industry. In addition, what is needed is a better mix of monetary and fiscal policies (particularly a reduction of projected deficits) which will be commensurate with a stable, non-inflationary growth path for the economy.

5. Industrial policy is also not readily suited to corporate factors. The adjustment of the private sector to changes in the economic environment is the responsibility of corporate management operating in a competitive market environment. Here, policy makers and the general public have a right to expect better policies than in the past, and I believe that the industrial community is prepared to meet this test as a result of the changes that have been made in recent years. In fact, many firms have had outstanding performances even during the recent difficult times.

6. One area in which the term industrial policy may be more applicable is in the area of longer-term structural problems, where the existing, ad hoc industrial policies impede economic performance. To some degree, longer term structural problems have resulted from existing regulatory and capital formation policies, as well as from exogenous factors such as changes in relative energy prices. The proper mix of policies should therefore consist of so-called positive adjustment policies designed to aid in market adjustment across industries, while the government must also reduce the existing regulatory barriers to capital formation and growth. It should be emphasized, however, that the principle thrust of policy in these areas should be to reduce the role of government in order to facilitate the adjustment of markets to economic change.

7. There should, however, be no government intervention in particular industrial sectors or firms unless this is necesitated as a matter of extreme national priority such as national security. Industrial policies which have involved greater state intervention in particular sectors have frequently led to uneconomic intersectoral transfers of capital and resources, thus ultimately retarding economic efficiency.

8. International trade is an area where there is substantial room for additional policies to improve our trade performance. Policy options include the creation of a department of international trade and industry, increased funding for the Eximbank, the maintenance of DISC-type incentives, the encouragement of joint R&D ventures, greater use of export trading companies, strengthening of our trade import laws in areas such as the 201 provision, and reducing regulatory impediments associated with the Export Administration and Foreign Corrupt Practices Acts. These measures would not technically be considered industrial policies, but a broad interpretation of that term could include some of these provisions.

Taken together, policies such as these could be quite helpful in achieving industrial revitalization. Conversely, in the consideration of industrial policy solutions, it should be borne in mind that greater state interventionism carries with it a series of risks and potentially adverse consequencies, such as exacerbation of rigidities, and distortions to the market process. Industrial revitalization policies designed to assist the market in functioning more effectively are in the final analysis preferable to greater intervention.

In sum, the industrial policy debate is a positive development because it attempts to address some of the nation's major industrial problems. Most industrial leaders are skeptical, however, because many of the proposed solutions do not address the real problems facing industry, and some of the solutions call for unjustified government intervention in the marketplace. Still, given the challenges that industry faces on a world-wide basis, now is not the time for dogmatism from any quarter. The NAM has not yet taken any formal positions on many of the industrial policy options that are being discussed. In general, we would oppose proposals that would substantially increase the degree of government intervention in the economy because many of our industrial problems stem from policy mistakes in this area. At the same time, we would support those policy options that strengthen industrial performance by relying primarily on improving the functioning of our market system. Having said that, there may be new forms of government-industry cooperation that could improve industrial competitiveness, particularly in the international area. We would hope to substantively contribute to the development of an awareness of the policies that will address the real problems facing American industry.

## TABLE 1: CAUSES OF INDUSTRIAL DETERIORATION

### BUSINESS CYCLE VOLATILITY

- -Procyclical bias in monetary and fiscal policies, financial instability
- -Rise in inflation at end of reflationary cycle, OPEC shocks
- -Worsening tradeoff and deeper recessions
- -Tight monetary and loose fiscal policies, high interest rates

### INTERNATIONAL COMPETITIVENESS

- -Exchange rate volatility and overvaluation of the dollar
- -Differentials in relative aggregate demand
- -Differentials in inflation, labor costs, productivity
- -Differences in export promotion policies

### LONG-TERM STRUCTURAL PROBLEMS

- -Increases in relative energy prices
- -Decrease in capacity to invest
- -Financial deterioration of business
- -Increased regulatory costs
- -Lower R&D spending and a slowdown in rate of innovation

### CORPORATE FACTORS

- -Institutional inertia, slowdown in market equilibration
- -Failure to adapt to increased openness of economy
- -Wage rigidity
- -Insufficient attention to firm level productivity

## TABLE II: ALTERNATIVE INDUSTRIAL POLICY OBJECTIVES

### EFFICIENCY AND PRODUCTIVITY

Improving the efficiency and competitiveness of the market by eliminating imperfections that distort market signals;

Improving the quality of economic decision making through improvements in information, analysis, and the institutional decision making process;

Increasing the overall level of growth and total factor productivity through supply side policies that are relatively neutral among industries;

Stimulating the positive adjustment of resources from less to more efficient uses by stimulating the use and efficiency of specific factors of productivity, eg. technology;

Encouraging growth industries on the grounds that efficiency flourishes most in environments where there are ample growth opportunities;

### EMPLOYMENT AND EQUITY

Stabilizing output and employment in mature industries and regions where there is reason to believe that they will not be subject to marked technological change or rising international competition for a period of years, i.e., preserving the status quo in industries where significant economic costs are not associated with prolonging their life;

Assisting industries or firms for a long enough period to provide the time for positive adjustment to occur;

Defending, temporarily, unmistakably declining industries as a means to compensate losers for the price they pay for accommodating to change;

ECONOMIC SECURITY

Fostering the modernization of industries deemed essential to the nation's defense or economic security;

INTERNATIONAL PERFORMANCE

Reducing disincentives or adding incentives to improve our international competitiveness on the grounds that our performance across all types of international transactions must give the nation a sustainable, non-disruptive, long run balance of payments position;

CONFLICT RESOLUTION

Providing the necessary institutional and political mechanisms for resolving conflicts and agreeing upon priorities.

## II. CYCLIC ASPECTS OF THE DECLINE

The major component of the industrial decline since 1974 can be traced to cyclic factors. Not only losses in industrial output, but also declines in capital formation and business profitability primarily reflect the impact of successive recessions in 1974-75, 1980 and 1981-82. The behavior of the business cycle over the last decade stands in striking contrast to the experience of the period 1961-73, when the United States underwent consistently high growth rates interrupted by only one minor recession. Since that time, fluctuations in the business cycle have exhibited increasing amplitude.

One significant result of the more severe business cycle downturns is that heavy industry has borne the brunt of the recessionary episodes. By heavy industry is meant sectors such as consumer durables (autos, appliances, etc.), machine tools, primary and fabricated metals and industries which provide the inputs to these sectors such as industrial chemicals. These sectors tend in general to be more cyclically sensitive, for several reasons. First, they are relatively more susceptible to inventory cycles, since changes in demand are associated with significant changes in the ratio of inventory to sales in these industries, and to resulting changes in levels of production. Second, the final status of demand in these sectors is critically dependent on the cost and availability of long term credit. For this reason, tight credit conditions and high interest rates lead to an immediate decline in demand in these sectors, leading to overbuilding of inventories and subsequent declines in production. Thus as a result of the very high levels of interest rates and decreases in credit availability during the recessionary periods, the contraction in output levels in these sectors has been roughly twice the decline in industrial production in the aggregate. In essence, the magnitude of the cyclical declines is the main factor accounting for erosion of the heavy industrial base.

Procyclical Biases in Demand Management While the OPEC crises have constributed to the destabilization of the business cycle, a more important factor has been the impact of monetary and fiscal policies, which tended to be procyclical in the long term, and thus led to an exacerbation of the reflation-recession cycles that have characterized the last fifteen years.

The early 1960s were characterized by highly successful policies which were able to achieve high growth without triggering an acceleration in inflation. However, from this point on, macroeconomic policies were noticeably poorer. During the Vietnam War, the main problem had to do with large deficits which were financed through money creation, leading to excessive stimulus and rising inflation. On subsequent occasions, under Nixon in 1971-73 and Carter in 1977-79, the problem was excessive monetary reflation, which caused the inflation rate to accelerate, while the industrial boom associated with looser money proved unsustainable in the face of financial volatility.

In essence, monetary and fiscal policies tended to be too expansionist during periods of recovery, leading to pronounced accelerations in inflation. The rise in inflation was exacerbated by the successive OPEC shocks (and in 1974-75 by the wage-price rebound following removal of controls), leading to a situation in which inflation rates reached destabilizing levels, and compelled a more prolonged disinflationary policy response. In the long term, therefore, the output gains achieved during the reflationary booms of 1971-73 and 1975-79 were eventually offset by the greater magnitude of the output losses during the disinflationary recessions of 1974-75 and 1979-82.

There are two possible explanations for the tendency for macroeconomic policies to become increasingly procyclical. One possibility is that policy decisions have tended to lag behind the actual state of the economy. Thus, rather than attempt to cool off the economy during destabilizing booms, policy makers did not apply restraint until the inflation rate had accelerated substantially. Similarly, little countercyclical stimulus was applied during recessionary periods until after protracted declines in economic activity. A second possibility is that macroeconomic policy decisions have become excessively influenced by short-term political pressures, causing recoveries to be pushed too far through excessive stimulus and recessions needlessly prolonged through excessive restraint.

The Worsening of the Tradeoff. One of the outcomes associated with the successive reflation-disinflation cycles of the late 1970s was a gradual worsening of the short run inflation-unemployment tradeoff. Or to put it another way, the near term Phillips Curve shifted Northeast from its position of the mid-1960s. As the underlying inflation rate gradually rose, each cycle of monetary stimulus tended to raise inflation by comparison with its level during the preceding business cycle. At the same time, as a result of the maturation of the generation born in the early 1950s and the unprecedented entry of women into the job market, the labor force grew very rapidly during the 1970s, increasing by over 20 million workers during the course of the decade. The result was that the structural rate of unemployment, i.e., the rate of unemployment associated with the equilibrium growth path of the economy, rose by nearly three percentage points during the 1970s by comparison with its level during the late 1960s. The result was that high employment could be achieved only at the expense of accelerating inflation. The political need to reduce inflation, impelled in part by public demands for greater price stability, led to more protracted monetary disinflation than would have been necessary if initial inflation rates had been lower.

The period of acute decline beginning in late 1979 is attributable primarily to the fact that monetary and fiscal policy have been fundamentally mismatched. Monetary policies were almost continuously restrictive from October 1979 until the initial loosening in July 1982. However, monetary restriction was not accompanied by a corresponding tightening of fiscal policy. Instead, fiscal policies have been excessively expansionist, resulting in large deficits, which resulted in severe congestion in credit markets and raised interest rates to levels not witnessed in over a century.

Monetary Policy Since October 1979, monetary policies have followed a new strategy aimed at lowering inflation by controlling the money supply directly. The main monetary aggregate was to be gradually decelerated within a decreasing target range, with a view to bringing the inflation rate down by five to six percentage points over a five year period. In retrospect, policies on the whole appear to have been excessively restrictive. From late 1980 through the end of 1981, the Federal Reserve consistently undershot its target range for the main monetary aggregate. Although M1 returned to its target range during the first half of 1982, even this result proved excessively restrictive with the result that in the second half the Federal Reserve was compelled to allow M1 to deviate substantially above its target range in order to reduce interest rates and stimulate a recovery.

Fiscal Policy The rise in interest rates and the decline in economic activity have both been exacerbated by fiscal policies which have been unnecessarily expansive. In 1980-81, the Federal deficit (on and off budget) averaged 2.8% of GNP, and in 1982 it rose to 4.2%, while for FY 1983 it is projected to surpass 6% of GNP. The result is that the deficits have tended to "crowd out" private borrowers, and have put upward pressure on interest rates. As one indicator of the degree to which this has taken place, the Federal participation rate in credit markets, which surpassed 33% of all funds raised in FY 1980-81, reached 48.9% of all funds raised in FY 1982, and is expected to account for roughly 60% in FY 1983.

Thus in the final analysis, the level of interest rates since late 1979 and the decline in economic activity trace back to the asymmetric mix of demand management policies — the combination of extreme monetary restriction coupled with fiscal expansion. More than any other single factor, it has been the destabilizing influence of monetary and fiscal policies and the resulting volatility in the business cycle and financial markets which is responsible for the deterioration in industrial performance.

## III. INDUSTRIAL PERFORMANCE IN INTERNATIONAL TRADE

During the last decade, the major contribution of exports to industrial performance has been to reinforce cyclic swings. American exports boomed during the high growth periods 1972-73 and 1976-79; they were particularly robust toward the end of these business cycles, in 1973 and 1978-79. However, the export booms were eventually superseded by contractions in exports in 1975 and 1981-82. The net result was that export booms tended to increase the growth rate of the economy during high growth periods, and export contractions exacerbated output losses during recessions. Apart from the cyclical behavior of exports, over the long term the United States has not been able to increase its exports as rapidly as other industrial countries. Thus despite the very rapid growth of exports during the 1970s, the ratio of American exports gradually declined, indicating that other industrial countries were able to achieve more rapid export growth.

The erratic behavior of American exports has been attributable to a series of factors. Paramount among these has been the dollar exchange rate, which has fluctuated violently over the past ten years, following a long period of overvaluation. Secondary factors include 1) differentials in domestic aggregate demand between the United States and other industrial countries 2) differentials in rates of wage and price inflation across national boundaries 3) the failure of the United States to undertake systematic export promotion policies.

The Exchange Rate. The major factor in accounting for the poor trade performance has had to do with exchange rate fluctuations, which in turn reflected changes in demand management policy following the severance of links to the Bretton Woods system in 1971.

Under Bretton Woods, the dollar was overvalued from the late 1950's onward. This tended to retard the growth of American exports, and led domestic manufacturing industries to concentrate primarily on the domestic market. The increasing multinationalization of American industry was also impelled in part by the overvaluation of the dollar. With exchange rates favoring imports, American companies established operations overseas and used foreign countries as "export platforms" in order to produce goods destined for the domestic market. The Bretton Woods system also encouraged import penetration of the American market by foreign corporations. Because of the undervaluation of the exchange rates of Japan and the West European countries, they were able to exploit increases in aggregate demand in the United States by shifting production to the American market.

The situation since this time has been more complex. The dollar, which had been under considerable downward pressure since the late 1960s, was formally devalued in March 1973, which marked the end of the short-lived Smithsonian Agreements. The exchange rate, which was then allowed to float, continued to depreciate under the impact of the first OPEC shock until late 1975. As the effects of the rise in oil prices dissipated and the inflation rate began to decelerate, the dollar appreciated until late 1976. Starting with the shift to a more reflationary policy in 1977, the dollar came under renewed downward pressure, falling steeply in the three year period 1977-79, and further depreciating in the speculative crisis in 1980.

In 1981, this pattern of consistent decline was abruptly reversed. Beginning in the fourth quarter, the dollar began to appreciate sharply. By the third quarter of 1981, the exchange rate had surpassed its level of 1972. The main factor accounting for the dramatic appreciation of the dollar was the increased differential between interest rates in the United States and the other industrial countries. High U.S. interest rates caused increased purchases of dollar-denominated assets in international financial markets, driving the dollar upward. In turn, the interest rate differential between the United States and the rest of the industrial world was due in large measure to the mismatch between restrictive monetary policies and fiscal policies that were too expansionist.

Differentials in Aggregate Demand. Apart from the impact of fluctuations in the exchange rate, the American trade performance has been adversely influenced by differentials in the growth rate of domestic demand between the United States and the other industrial countries. This was particularly in evidence during the Vietnam War boom of 1965-69, and the recovery years of 1975-77.

During the Vietnam War, the United States followed expansive demand management policies and underwent continuous growth until the end of the decade. Conversely, Western Europe underwent a recession in 1965-66. The result was that with higher levels of demand in the United States, the other industrial countries were able to respond to the decrease in domestic demand by shifting to export markets. As a result, the ratio of American exports to total OECD exports declined by over two percentage points during the Vietnam War era.

Roughly the same process took place in 1975-77. At this time, demand management policies in the United States were highly reflationary, while in Europe and Japan demand management was more cautious. The result was that the rise in economic activity in the United States at this time was propelled largely by domestic demand, whereas Europe and Japan experienced disinflationary recoveries in which growth rates were more dependent on exports than on domestic demand. As a result of the fact that the recovery in the United States was based in domestic demand while the recovery in Europe was export-led, the ratio of American exports to OECD exports fell by nearly three percentage points in 1975-77.

Differentials in the Growth of Unit Costs and Productivity. The periodic emergence of differentials in the growth of unit costs between the United States and other industrial countries has also been a factor in accounting for the better export performance overseas. The fact that countries like West Germany and Japan were more successful in controlling inflation than the United States, particularly during the late 1970s, is one reason why they were able to increase their exports more rapidly at this time.

During the Vietnam War, both West Germany and Japan held their wage inflation rates to levels substantially below those in the United States, and underwent periods of rapid export-led growth. Subsequently, during the worldwide reflationary boom of the early 1970s, West Germany was successful in holding its wage inflation rate below the international average through a combination of restrictive demand management policies and revaluations of its exchange rate, with the result that the boom of the early 1970s in Germany was also predominantly export led. Subsequently, in the wake of the first OPEC crisis, both West Germany and Japan adopted cautious demand management policies while the United States reflated, with the result that wages accelerated consistently in the United States, while they tended to decelerate in West Germany and Japan.

A further factor in accounting for the cost differential was a differential in the rate of productivity growth. While productivity growth fell relative to trend throughout the industrial countries as a result of the OPEC shocks, during the late 1970s Japan and most of the West European countries were still able to increase their productivity much more rapidly than the United States. Hence the escalation in unit labor costs in the United States reflected not only the more reflationary stance of demand management, but also the deterioration in cyclically-adjusted productivity.

By 1978, a marked differential in wage growth rates had emerged. In West Germany and Japan inflation rates had decelerated to less than 3%, while in the United States the inflation rate was accelerating to over 8%. While the effect of the inflation differential was partly offset by the depreciation of the dollar, by 1980-81 as the dollar appreciated, the United States was left with a substantially higher inflation rate than West Germany and Japan. In this respect, the better inflation performance in these countries contributed to the strength of their export performances, particularly by comparison with that of the United States.

Differences in Export Promotion Policies. Over the long term, American industry has not had access to the same kinds of export promotion policies that have been used in other countries. In most of the other industrial countries, public policies have been systematically geared to export promotion. The policy instruments through which exports have been promoted include 1) tax credits or exemptions for exporters; 2) credit allocation to export industries through semi-public financial consortiums or regulatory controls over capital flows; 3) selective pricing by nationalized corporations both in international markets and in domestic industries that provide inputs to exporters; 4) fiscal subsidies by central or local governments or parastate institutions; 5) provision of special credit terms to foreign countries purchasing exported goods. The net result is that governments have cooperated closely with the private sector in the development of systematic export promotion policies.

Conversely, private companies in the United States have not enjoyed the same advantages, due to a lack of any comparable export promotion policies. The major public policies available for export promotion in the United States have been tax advantages through DISC (Domestic International Sales Corporations) and easier credit terms through the Export-Import Bank. These have neither been as extensive as the corresponding advantages made available to exporters by governments in other countries, nor as systematic. The failure of the Federal government to pursue the same kinds of export promotion policies as have been adopted by the governments of other industrial countries has placed American corporations at a serious competitive disadvantage in international markets.

## IV LONG-TERM STRUCTURAL PROBLEMS

In addition to cyclical volatility and problems in international trade, there is evidence of additional elements of the decline which are fundamentally long-term and non-cyclic in nature. One manifestation of the longer term decline has to do with the rate of productivity growth, an important measure of the aggregate efficiency of the economy. Another way of looking at the long-term element of the decline is in terms of the determinants of potential GNP. Potential GNP, the theoretical capacity of the economy to produce, is measured as the long-term trend of factor inputs to production. Thus potential GNP is a function of technological change and inputs of labor, capital and energy (in some recent specifications of the production function, R&D is added as a separate factor input). From this perspective, there have been a series of longer term factors which have lowered the trend rate of growth of potential GNP over the past ten to fifteen years.

Changes in Relative Energy Prices Energy is a major factor input of production, contributing significantly to the determination of potential GNP. Therefore, increases in the relative price of energy lead to changes in the opposite direction in potential output. For this reason the successive OPEC oil price shocks have had a significant negative impact on potential GNP.

In 1973-74, OPEC oil prices were raised 400%. In 1979, they were raised by an additional 150%. The effects of the oil price rise were exacerbated by the fact that in order to pay for oil imports, an increased share of income and purchasing power was transferred overseas. Thus the OPEC shocks were associated with both a decrease in potential output due to the reduction in direct energy inputs, and a decrease in actual industrial output due to the transfer of income to the OPEC countries.

These in turn had a series of additional indirect implications for the economy. First, because of the higher complementarity between capital and energy inputs to production, the OPEC shocks were associated with a decrease in capital formation; since increases in relative energy prices imply a corresponding increase in the cost of capital, capital inputs to production also declined. Secondly, because of the drop in demand associated with the transfer of purchasing power to OPEC, real output was further reduced, beyond the reductions implied by the decline in energy inputs. The decline in real production was associated with additional decreases in non-energy inputs. According to a study by Dale Jorgenson, the first OPEC shock in 1973-74 is estimated to have reduced actual GNP by 3.4 percentage points by 1976 by comparison with the levels it would have attained with 1972 energy prices still in effect.

Capital Formation Inputs of physical capital are a major determinant of potential GNP. The United States has undergone a sharp decrease in real business fixed investment since 1979, following a deeper, if shorter-lived decline in 1974-75. Although the growth of business fixed investment has tended to correlate with the business cycle, the decline in investment in 1974-75 and 1980-82 appears to be somewhat greater than would be implied by cyclical underutilization of capacity. Hence, the magnitude of the declines on both occasions has reflected the impact of additional causes.

Apart from cyclical underutilization of capacity, the causes of the decline in capital formation have had to do primarily with the energy price shocks and increases in the user cost of capital. Because of the relationship between factor inputs of energy and capital noted above, the successive OPEC price shocks in 1973-74 and 1979 reduced capital formation directly. The OPEC shocks also account for the deterioration in the net investment ratio. Higher relative energy prices made much of the existing capital stock obsolete, since the equipment in place at the time ran on cheap energy. Thus the sharp increase in investment in 1976-78 can be interpreted more in terms of conversion to energy-efficient plant and equipment than expansion of net new investment.

A major additional factor has been the increase in the user cost of capital--the rate at which corporations obtain funds for investment--since the late 1970s. Since the late 1960s, the user cost has been unusually high, with the result that even before the dramatic increase in interest rates in 1979, corporations faced a severe aggravation of the costs they incurred in obtaining capital. An additional factor here was the decrease in the real rate of return on corporate equity during the late 1970s, which lowered corporate equity values and retarded capitalization. Since 1979, with interest rates at their highest levels in over a century, the increase in the user cost of capital has been a major factor in accounting for the decline in investment.

The Financial Deterioration of Industry A major determinant of the level of capital investment has to do with the financial condition of business. Real levels of profitability determine the level of investment that can be financed from retained earnings. Similarly, the liquidity of a company is an important influence on the degree to which working profits will be channelled into capital formation.

There has been a serious decline in both corporate profits and business liquidity, which has been particularly marked since late 1979. During the recessionary period beginning in 1979, real profits fell to their lowest level since the recession of 1974-75, while business liquidity fell to its lowest level of the postwar period. Prior to this time, however, there were longer term declines in real profits from the late 1960s until the recovery of the late 1970s, and evidence of higher leveraging of the business sector, which created the preconditions for the emergence of the liquidity crisis after 1979.

Several factors contributed to the decline in profitability. Wage-price controls and guidelines tended to depress prices in relation to labor costs, with the result that when controls were in force, particularly in 1971-74, the deflection of the price trajectory below its free market path was achieved primarily through constriction of profit margins. Thus the Nixon price controls of 1971-74 account in large measure for why profits were lower than their peak levels of the late 1960s during the recovery of 1971-73. Another factor had to do with the exaggeration of corporate tax liabilities by inflation. Here two mechanisms were involved, overstatement of inventory profits and understatement of depreciation costs under the old ADR system. The combined effect of these distortions was that real rates of business taxation averaged over 51% during the 1970s, well above the statutory rate. Working profits were subject to even greater downward pressure, due to cost increases associated with future purchases and wage payments.

Side-by-side with the decline in profits since 1978, there has been a corresponding decline in liquidity, due primarily to heavy dependence on short-term debt as a means of meeting capital requirements in a high interest rate environment. The dependence on short-term debt reflects two factors, an obvious reluctance on the part of business to incur long-term debt at exceedingly high interest rates, and a corresponding reluctance on the part of banks to undertake long-term lending when uncertainty about interest rates means that longer run commitments may not guarantee optimal rates of return on loans. However, it is the pervasive dependence on short-term debt that is primarily responsible for the rise in the debt service ratio.

At the same time, there has been a serious rise in the debt-equity ratio, an important measure of the financial structure of corporations. The high ratio of debt to equity is not merely a result of the current recession, however, but reflects longer run factors. The rise in interest rates during the late 1970s caused the rate of return on bonds and Treasury bills to exceed the real rate of return on corporate equity, prompting investors to switch their asset portfolios from corporate stock to bonds. This in turn forced business to rely more heavily on borrowing than on new stock issuances in order to obtain working capital, leading to a deterioration in the debt-equity ratio. The significance of the increase in the ratio of debt to equity was primarily to heighten the vulnerability of the business sector to the increase in interest rates since late 1979. The result was that the contraction in corporate cash flow was considerably more acute than it would have been with a more favorable debt-equity structure, since an increasing share of profits was tied up in debt service.

Regulatory Costs A further important factor in determining the capacity of business to undertake new investment has been the increase in regulatory cost. The dramatic increase in government regulation that has taken place since the early 1970s has had a major adverse impact on the capacity to invest, primarily by diverting capital and resources into regulatory compliance activity.

This has been reflected in several areas. On the most immediate level are administrative costs and direct costs of compliance. Both of these have risen dramatically in recent years. The purely administrative aspects of compliance with regulation have been rendered more complex, not only by the increase in regulation itself, but also by the fact that with expansion of regulatory activity, the jurisdictions of regulatory agencies have tended to overlap, producing a variety of regulations administered by different agencies in the same sector. Compliance costs are aggravated both by the necessity of buying and maintaining the equipment mandated by regulation, and by the resulting higher overhead. The costs of compliance have been further exacerbated by the fact that regulations are frequently "process-oriented" rather than "goal-oriented"; they specify the particular methods to be used, which are not necessarily equally applicable to all firms in an industry and may result in decreased efficiency.

A second aspect of the regulatory burden, at still another level, lies with "opportunity costs," i.e., foregone profits, investment and innovation caused by the diversion of capital and resources into compliance activities.

These direct effects do not, of course, take into consideration some of the more intangible costs of regulation such as allocative inefficiencies and distortions in regulated industries. Frequently, non-environmental regulation has had its origins in attempts to simulate free markets or, conversely, attempts to protect sensitive sectors through cartelization or price supports. Putatively anti-monopolistic regulations which simulate competitive pricing may introduce distortions, inasmuch as the processes by which competitive prices were determined in the market may not be replicated under controlled prices. This leads to higher overhead costs, uneconomic transfers of labor and capital, and inefficient resource reallocations. In addition to this, the opposite process, suppression of competition by price supports has exerted a negative impact on productivity growth because of the resulting rigidities. In all situations where prices are controlled by regulation, distortions will be introduced due to the inability of the regulatory agencies to calculate marginal costs for firms and their inability to adjust to changing conditions of supply and demand. The result may be a tendency for regulation to act as a deterrent to new investment.

Research and Development Spending on research and development (R&D) is a major determinant of technological change and therefore indirectly of potential output.

A major decline in R&D spending took place roughly from 1969 to 1975, during which time R&D expenditures in the aggregate fell below their level of the late 1960s. From 1960 to 1968, R&D spending in constant dollars increased 52%. Thereafter, there was a small decrease coinciding with the recession of 1969-70. However, during the recovery of 1971-73, R&D spending lagged the business cycle, and in 1973 real R&D outlays were below their peak levels of the 1960s. There was a renewed decline coinciding with the recession of

1974-75. Thereafter, however, R&D spending underwent a marked recovery which was sustained through 1981.

In accounting for the falling off of R&D spending during the early 1970s, one factor was the deescalation of the Vietnam War, which led to a direct decline in military R&D. Thereafter, the gradual shift in the composition of Federal spending from defense to transfer payments during the mid-1970s was associated with a further slackening off of R&D expenditures relative to trend. However, a substantial component of the R&D slowdown was in industrial rather than Federally sponsored research, and probably is attributable to the deterioration in profitability during the mid-1970s.

The fact that the recovery in R&D outlays has been sustained since 1979 is, however, quite remarkable in view of the decline in real profits during this period. Despite falling profits and severe illiquidity, the private sector has been able to increase its real allocations for R&D, in part because of the R&D tax incentives enacted under ERTA, including a moratorium on Section 1.861-8 of the Treasury Regulations, and an incremental R&D tax credit. The result of these new tax incentives is that R&D spending has held up quite well during the recent recessionary period.

## V. CORPORATE FACTORS

Although single firm behavior does not by and large impact on the performance of the macroeconomy, it may be useful to draw attention to certain micro-institutional factors at the corporate level which have tended to retard market and firm adjustment to economic change.

The long period in which the United States functioned as a semi-autarkic industrial power and in which external trade comprised a minimal share of GNP made it more difficult for corporations to adjust to the opening up of the economy to international markets and competitive pressures during the 1970s than was the case in countries which have historically had open economies. The result was that investment strategies failed to take sufficient account of foreign competition, and American firms were not particularly aggressive in attempting to penetrate external markets.

At the same time, the long period of price stability from the end of the Korean War up to the Vietnam War escalation of the late 1960s made it difficult for corporations to adjust to the new, volatile price environment. The distortion of market signals by inflation was associated with a greater prevalence of defensive investment strategies on the part of corporations, in which the length of corporate plans was reduced and risky long run investment plans were avoided.

The historically semi-autarkic nature of American industry and the more inflationary environment beginning during the late 1960s led to inadequate attention to productivity and efficiency at the single firm level. The decreased attention to single firm productivity reflected a lack of awareness that declining competitiveness would be followed inexorably by penetration of domestic markets by foreign suppliers that could produce more efficiently and could increase their productivity more rapidly. It also reflected the supposition that low rates of productivity growth could be allowed since an accommodative monetary policy would allow the resulting increases in unit labor costs to be passed along to consumers.

The difficulties involved in adapting to the more internationally integrated and higher-inflation environment of the 1970s, both at the single firm and the public policy level can both to some degree be traced to the emergence of institutional inertia at the corporate level. As some corporations became progressively more institutionalized, their responsiveness to changes in the external environment was correspondingly diminished. Frequently, their response is less one of adaptation so much as one of perpetuation of existing institutional rigidities. The results of institutional inertia can be gauged in a comparison of the performances of the companies that have done particularly well during the last decade and those that have not. The successful firms were typically less bureaucratized, more entrepreneurial and more prone to innovate, as documented in more detail in the recent book In Search of Excellence.

A more important factor has had to do with wage rigidity, as manifested in the development of multi-year wage settlements incorporating cost of living adjustments. The result has been to introduce a strong element of inertia into the process of labor market equilibration. Both the rise in inflation over the business cycle and the magnitude of the output losses during recessions have been exacerbated by wage rigidity. If wages are perfectly flexible, decreases in demand lead to a downward equilibration in real wages, leading to decelerating inflation with minimal declines in economic activity. Conversely, if wages are rigid, restrictive monetary policies yield higher interest rates, losses in output and profitability, and rising unemployment. Only as slack accumulates in labor markets do wages begin to decelerate, yielding lower inflation but at the expense of severe losses in economic activity. Wage behavior in the United States exhibits considerable evidence of rigidity. As inflation rates have accelerated under the impact of increasing demand, wages have risen in response to prior price movements in an effort to maintain purchasing power. Thus due to the rise in inflation associated with reflationary demand management cycles and the OPEC crises, wages have not decelerated rapidly during the ensuing disinflationary periods, meaning that only through exceedingly deep recessions have wages been able to be brought down to a less inflationary path.

A further problem resulting from wage rigidity is that as wages rose in proportion to prior price movements in an effort to maintain constant purchasing power, business confronted an unfavorable escalation of unit labor costs; this was exacerbated by the slowdown in productivity growth. However, business was not always able to pass these costs through to consumers, particularly during periods in which aggregate demand declined. Consequently, part of the escalation in unit costs was borne by business rather than consumers, and was reflected in lower profit margins.

Although these factors were significant during the 1970s for some firms, many firms demonstrated continued capacity to adapt to change. The prolonged recent recession also caused many firms to radically alter their operations and management. American industry is now poised to be more competitive on a worldwide basis. The major impediments to achieving that objective fall in the areas of public policy that in fact are partially responsible for industrial deterioration.

In conclusion, I hope that this testimony has shed enough light on these causes to contribute to the debate on how to improve our industrial competitiveness. Thank you, Mr. Chairman. I will be pleased to respond to any questions.

Representative HAMILTON. We're glad to have you with us this morning, Mr. Noyce. You may proceed with your statement, as you wish, please.

## STATEMENT OF ROBERT N. NOYCE, VICE CHAIRMAN OF THE BOARD, INTEL CORP., SANTA CLARA, CALIF., AND CHAIRMAN, SEMICONDUCTOR INDUSTRY ASSOCIATION

Mr. NOYCE. Thank you very much. After thinking very much about this hearing this morning, I thought the best thing to do this morning would be to give you an example of one of the "sunrise" industries which I've been associated with for many years. Some of this will be a little bit of personal history because I think that helps in understanding why I think the way I do.

I grew up in Iowa. I went to Grinnell College in the Midwest, if you will. Then I went to MIT and got a Ph. D. in physics. I worked in semiconductor research at Philco and then for Bill Shockley out in Palo Alto. Bill Shockley, as you know, was a Nobel laureate and an inventor of the transistor. Thereafter, I cofounded Fairchild Semiconductor and managed that for 10 years. And then in 1968, I founded Intel Corp. and served, first, as its president and I've kicked myself upstairs, if you will, since that time.

I'm a member of the National Academy of Engineering, the National Academy of Science. I've been awarded the National Medal of Science. And Intel has been selected by Fortune as one of the 10 best managed companies in America.

Intel is on the Fortune 500 list. Fairchild Semiconductor, if it stood as the independent company, would be on that list as well.

Now that's sort of a self-serving, personal recital, but I think it will help you understand where I'm coming from.

The development of the semiconductor industry is a particularly American phenomenon. The transistor was invented in 1947, in doing some research in some rather complex surface phenomenon at Bell Labs. And it was quickly recognized that this was going to be a major innovation in the electronics industry.

Shortly after its invention, the work on transistors was undertaken by nearly every industrial electronics laboratory in the world, including the vertically integrated companies that we're familiar with in this country, like General Electric and RCA, Raytheon, Sylvania, Westinghouse, Philco, and several others.

In Europe and Japan, those same established electronics companies are still the recognized names in semiconductor production. Philips and Siemens in Europe, Toshiba, Hitachi, Matsushita, and Nippon Electronic in Japan.

As you know, in the United States, with the exception of IBM and Western Electric, the top names in the semiconductor industry do not include those early participants, but rather, the late arrivals to the industry, such as Motorola, Texas Instruments, National Semiconductor. Advanced Micro Devices, and Intel.

The early participants did a creditable job. I don't argue with that. It's just simply that the new participants did a better job. The early participants did a job similar, I would say, to that job done by the European and Japaneses giants, at least until recently in Japan.

The real edge of advantage has been the performance of these younger, new companies.

The semiconductor market has always been an international one and has always been recognized as an international one. We have had major battles with foreign competition in the past and usually, the foreign competitors have been bested by these young, aggressive, American companies.

The first battle was fought over the germanium transistor market. The Americans won that by simply changing the battleground to the silicon transistor and then won on the basis of a superior technology. The second battle was joined about 1970, a major battle between the United States and Japan. That was won by the Americans because the Americans had more favorable economy of scale and lower costs than the producers in Europe or Japan.

In the mid-1970's, another battle was joined, but this time it was with a new twist. It was with Government support in both Europe and Japan. Because of their strong desire to establish an indigenous semiconductor industry which they saw as fundamental for the development of their national economies.

The European developments have been quite unsuccessful, as you know. The Japanese efforts appear to have been successful, at least until this date. Japan's market share is rising rapidly.

The U.S. industry, though, is still substantially larger than is the Japanese industry.

We haven't been surprised at the Japanese success and, indeed, as the VSLI project in Japan was initiated, the semiconductor industry got together to try to figure out what appropriate response to this Government intervention in the market should be.

There is a lot of complaints about the Japanese. Many of the practices that they have used are viewed as unfair or illegal in the United States. And they include the wide range of policy measures that has become a litany of complaint against Japan.

We have often hoped that we could get Japan to play by our rules. I don't think there's any hope of that whatsoever, since Japan certainly feels that by playing by their own rules, they're winning the game. And they certainly may win the game in the long range.

It's within that context that I'd like to go back to industrial policy. I feel that there are several things that have changed significantly in this last battle for worldwide supremacy in that marketplace and I'd like to outline them.

First, our output of trained scientists and engineers took an absolute dip in the 1970's. During 1970 to 1980, when the industry grew a factor of three and its personnel requirements grew commensurate with that, the output of engineers was actually lower than it was in the decade of the 1960's. Furthermore, there's a suggestion anyway that the engineers are less well trained now than they were earlier because of a lack of equipment and adequate instructors in our universities.

Second, during this last decade, investment capital was either in short supply or very, very expensive. It was in a critical growth area for the industry.

Today, we have the highest real interest rates that we've had in our country. Capital is again readily available and, indeed, is flowing into this industry. But that can't reverse the effects of earlier underinvestment.

Third, and this is perhaps most important, Japan set the development of the semiconductor industry high on their national priority list.

The joint development which was conducted with substantial Government subsidy was, I think, less important than just simply the annoucement that this was going to be afforded high priority. With the tradition of cooperation between Government and industry in Japan, that announcement, in effect, was telling those making the investment decisions that this was a low risk investment. Consequently, investment money was readily available without the need for short-term profitability.

And then, fourth, America's overall commitment to research and development has dropped during the 1970's by nearly a full percentage point. Industrial research has increased during this period of time, but it has not increased enough to make up for the drop in federally sponsored research.

The question, then, is what should we do in this kind of an industry to make up for our losing ground? I think, first of all, we should do those things which the industry cannot do for itself. There's been a great deal said about capital formation. The savings rate is basically set by Government policy and other nations have outperformed the United States in that area by a large margin. Japan, in particular.

Representative **Hamilton**. Mr. Noyce, I think I'll interrupt you at this point and we'll take a recess because the bells have rung for a vote. I'll run over and cast a vote and be back here in about 10 or 15 minutes.

Mr. **Noyce**. Very good.

Representative **Hamilton**. It will give you a bit of a break. I'm sorry for the interruption.

The committee will stand in recess.

[A short recess was taken.]

Representative **Hamilton**. The committee will resume its sitting.

Mr. Noyce, you were about ready to tell us what we ought to do. So go ahead with your statement and we'll pick up there.

Mr. **Noyce**. I had mentioned four things that I had seen change in the recent past here. That was education, capital formation, targeting practices, and research and development.

Certainly, our Government has got to figure out some ways to counter the effects of targeting very quickly and surely so that we can discourage targeting by our foreign competitors.

The semiconductor industry doesn't favor protectionism. We think that that will, in general, invite retaliation. We do think that we need to be sure that the game is played by a consistent set of rules on both sides of the Pacific.

Our industry has, as a matter of fact, favored the unilateral suspension of duties on semiconductors. That would save American industry some $60 million a year which could go into R&D and capital investment.

If we can't find some ways to counter that targeting, I think that our country is going to have to adopt some similar practices if we're going to find a level playing field for international competition.

Research and education, I feel, fall into a different category. Even though industry does support basic research and education, that support is going to fall to suboptimal levels just because of the economic realities. If we have an industry with two equal competitors, the winning strategy is to sit back, let the other guy do all of the work, and then take advantage.

Thus, I think that if we're going to get research, including the basic research in industrial laboratories funded to an optimal level, it's going to have to take Government funding.

Industry has tried to offer a partial solution to this problem by organizing various joint research efforts at our universities and in private organizations. The status of some of those efforts under the antitrust laws is not clear and I think to encourage more of them, which I think would be good for the country, we're going to have to get new legislation to clarify the status of these joint research projects.

Another one which has just been illustrative of the problem is that semiconductor designs are not clearly covered by copyright. They fall into the crack between the copyright law and the patent law and that has allowed piracy of this intellectual property, which we feel should be stopped.

I, personally, have a great concern about our ability to pick winners and losers. Lester Thurow has suggested, and I hope facetiously, that it would be simple to do so since all we'd have to do would be to follow the Japanese list. Well, the Japanese are following our list, so we're going to be going around in circles if we do that.

In particular, in private decisionmaking, those that decide to make an Edsel don't stay around very long. But I'm not sure that would be the case in Government and I have great concern about that.

I'd like to tell this story because I think it's illustrative. I've spent most of my time in entrepreneurial high tech industry. A few years back I told my wife not to invest in what has turned out to be the most successful startup in the history of American industry. That was Apple Computer. And it is precisely because those of us who should have known better didn't see that opportunity, including, if I may say so, the big established computer companies that gave Apple such a big opportunity.

I'm afraid that that kind of performance would be replicated in any committee decision on what we should invest in.

Representative HAMILTON. That story makes some of the rest of us feel pretty good, too. [Laughter.]

Mr. NOYCE. My wife went ahead and did it. That's the nice part. So I feel happy about it.

Anyway, the other part, and Jerry Jasinowski has talked about this, is that we do need to get some more rationalization of our policies and consistency within those policies.

Representative HAMILTON. I'm sorry. I'm going to have to interrupt you again because there's another vote and we'll have to go through this same process.

So I'll go vote, come back, finish up, and then we'll turn to questions. I'm sorry for the interruption. The committee is in recess.

[A short recess was taken.]

Representative HAMILTON. The committee will resume its sitting and we'll try again, Mr. Noyce. You may proceed.

Mr. Noyce. OK, thanks. As I said, I think that one of the things that we need to do is to rationalize the activities of the various departments of the Government so that we're all seeing it from the same book. I listed in my statement here several of the things that we see which seem to be conflicting requirements that are placed on industry, or places where we have sacrificed the competitiveness of American industry to other social goals. Laudable as they may be, each one is a minor decrement in our ability to compete on the world market. But, in total, they have had a major impact.

Along that line, one of the things that we have talked about has been the question of whether it would not be useful for the Department of Commerce to report to Congress periodically on what those conflicts are and try to devise a game plan to resolve them so that American industry was given a clear direction as to what Government would like to see done there.

There has been a great deal of discussion about sunrise and sunset industries. It seems to me that our major problem as a nation now is to manage change, which is certainly accelerating in this world of ours today. We have always supported certain industrial sectors as a matter of national policy. We have an opportunity, it seems to me, to facilitate the change in the same way that we have in the past, by various Government programs.

I think the mechanism by which I come before this committee is probably the essence of the mechanism by which America really can remain competitive in the world market. I had a good undergraduate education which was financed out of charity. I have a good graduate education which was financed by the Federal Government in research grants. When I wanted to strike out on my own, it was possible to do so. The first startup was done by corporate venture capital. The second startup was done by private venture capital.

I think that mechanism is one that really offers America an advantage over its international competition.

Ed Zschau, who is my local government, has said that the way to do this process is to target the entrepreneur rather than the industry, and I must agree with him. And I think as long as that process is functioning, we have a good opportunity to survive competitively in the world.

Representative Hamilton. Thank you very much, Mr. Noyce, for your testimony.

[The prepared statement of Mr. Noyce follows:]

## PREPARED STATEMENT OF ROBERT N. NOYCE

I AM ROBERT NOYCE, VICE CHAIRMAN OF INTEL CORPORATION, WHOSE PRIMARY BUSINESS IS VLSI SEMICONDUCTOR COMPONENTS.

AFTER A GREAT DEAL OF PONDERING, I HAVE DECIDED THAT THE MOST USEFUL THING I COULD DO FOR THE COMMITTEE THIS MORNING WOULD BE TO RECITE SOME OF THE HISTORY OF THE SEMICONDUCTOR INDUSTRY, BOTH PERSONAL AND CORPORATE, TO ENHANCE YOUR UNDERSTANDING OF THIS NEWLY RECOGNIZED "SUNRISE INDUSTRY." THEN I WOULD LIKE TO CONCLUDE WITH A VIEW FROM THE TRENCHES, WHICH I BELIEVE REPRESENTS A BROADER VIEW THAN A PERSONAL ONE.

I GREW UP AS A PREACHER'S KID IN SMALL TOWNS IN IOWA. AFTER GETTING A B.A. FROM GRINNELL COLLEGE (IOWA) I STUDIED PHYSICS AND RECEIVED A PH.D. FROM M.I.T. I WORKED IN SEMICONDUCTOR RESEARCH AND TRANSISTOR DEVELOPMENT AT PHILCO CORPORATION IN PHILADELPHIA, THEN WITH WILLIAM SHOCKLEY, A COINVENTOR OF THE TRANSISTOR, AND NOBEL LAUREATE IN PALO ALTO. I WAS A COFOUNDER OF FAIRCHILD SEMICONDUCTOR IN 1957, WHICH I MANAGED FOR TEN YEARS. IN 1958 I COFOUNDED INTEL CORPORATION, SERVING AS ITS FIRST PRESIDENT, AND LATER AS ITS CHAIRMAN. I AM A COINVENTOR OF THE INTEGRATED CIRCUIT WITH JACK KILBY, THEN OF TEXAS INSTRUMENTS. I HAVE BEEN ELECTED TO THE NATIONAL ACADEMY OF ENGINEERING, THE NATIONAL ACADEMY OF SCIENCE, AND HAVE BEEN AWARDED THE NATIONAL MEDAL OF SCIENCE. BOTH FAIRCHILD SEMICONDUCTOR, IF IT WERE AN INDEPENDENT COMPANY, AND INTEL CORPORATION MAKE THE FORTUNE 500 LIST. INTEL HAS BEEN CITED BY FORTUNE AS ONE OF THE TEN BEST MANAGED COMPANIES IN AMERICA. I HOPE YOU WILL FORGIVE THAT APPARENTLY SELF-SERVING RECITAL OF PERSONAL HISTORY, BUT I HOPE IT WILL AID

YOU IN UNDERSTANDING WHAT HAS SHAPED MY ATTITUDES.

THE DEVELOPMENT OF THE SEMICONDUCTOR INDUSTRY IS A UNIQUELY AMERICAN PHENOMENON. THE TRANSISTOR WAS INVENTED AT BELL TELEPHONE LABORATORIES WHILE SEEKING AN UNDERSTANDING OF COMPLEX SURFACE PHENOMENON ON SEMICONDUCTOR MATERIALS IN 1947. SHORTLY THEREAFTER, WORK WAS INITIATED ON TRANSISTORS IN MOST OF THE INDUSTRIAL ELECTRONICS LABORATORIES IN THE U.S. AND ABROAD, INCLUDING ALL OF THE RECOGNIZED ELECTRONICS COMPANIES OF THE DAY, SUCH AS GENERAL ELECTRIC, RCA, RAYTHEON, SYLVANIA, WESTINGHOUSE, AND PHILCO. IN EUROPE AND JAPAN, THE THEN ESTABLISHED ELECTRONICS COMPANIES, ARE STILL THE RECOGNIZED SEMICONDUCTOR COMPANIES: PHILIPS AND SIEMENS, TOSHIBA, HITACHI, MATSUSHITA AND NIPPON ELECTRIC. YET, IN THE U.S., THE TOP NAMES IN THE SEMICONDUCTOR INDUSTRY, WITH THE EXCEPTION OF IBM AND WESTERN ELECTRIC, DO NOT INCLUDE THOSE EARLY PARTICIPANTS, BUT RATHER LATER ARRIVALS IN THE SEMICONDUCTOR INDUSTRY, SUCH AS MOTOROLA, TEXAS INSTRUMENTS, NATIONAL SEMICONDUCTOR, ADVANCED MICRO DEVICES, AND MY OWN COMPANY. THE EARLY AMERICAN PARTICIPANTS IN THE INDUSTRY, THE ESTABLISHED ELECTRONICS COMPANIES, HAVE DONE A CREDITABLE JOB IN PURSUING THE SEMICONDUCTOR BUSINESS, COMPARABLE TO THE EUROPEAN AND, UNTIL RECENTLY, THE JAPANESE GIANTS. THE EDGE OF ADVANTAGE FOR THE AMERICAN INDUSTRY, HOWEVER, HAS BEEN THE NEWER PARTICIPANTS.

THE INTERNATIONAL BATTLE FOR DOMINANCE OF THE WORLD-WIDE SEMICONDUCTOR MARKET IS NOW BEING JOINED FOR THE THIRD TIME. THIS HAS ALWAYS BEEN A WORLD-WIDE MARKET. IN THE EARLIER FORAYS THE FOREIGN COMPETITION HAS BEEN BESTED BY THE AGGRESSIVELY competitive, young American industry. The first battle was fought over the germanium transistor market. The American industry won that skirmish by switching the battleground to silicon transistors in the early 1960's, winning on the technical merits of the case. The second battle was waged on small scale integrated circuits around 1970. The battle was won by the more favorable production costs in America due to economies of scale, as compared to producers in Europe or Japan.

In the mid-70's the battle was again joined, but with a new twist: in both Europe and Japan, it became a matter of national priority to establish a strong indigenous semiconductor industry, and various government policies were adopted to further progress toward that end. As you know, the European programs were notably lacking in success, and may have further weakened their industries, by diverting attention from efforts to achieve product superiority to efforts to acquire government aid. It appears that the Japanese efforts have been successful, and Japan's market share is increasing rapidly. The American industry is, however, significantly larger than is the Japanese industry today.

The American industry has long recognized the challenge for dominance arising from Japan. When the Japanese VLSI project was started in the mid 70's, the Semiconductor Industry Association was formed in order to study potential problems and responses by the American industry.

Many of the Japanese practices are viewed as unfair or illegal in the United States. These include limiting access to

THE JAPANESE MARKET, CARTELIZATION AND SHARING OF DEVELOPMENT ACTIVITIES, SIGNIFICANT GOVERNMENT SUBSIDIES, DIFFERENTIAL PRICING ON THE DOMESTIC AND EXPORT MARKETS, COPYING OF DESIGNS OF AMERICAN PRODUCERS, DIFFERENTIAL TARIFF RATES AND OTHER PRACTICES, SOME OF WHICH HAVE BEEN MODIFIED OR ABANDONED BY THIS TIME, IN PART DUE TO PRESSURE FROM AMERICAN TRADE NEGOTIATORS. WHILE WE MIGHT HOPE THAT THE JAPANESE WOULD AGREE TO PLAY THE GAME OF INTERNATIONAL COMPETITION BY OUR RULES, THEY HAVE NO REASON TO DO SO, FOR THEY PERCEIVE THAT THEY ARE WINNING THE GAME USING THEIR CURRENT STRATEGY. THEY MAY.

IT IS IN THIS CONTEXT THAT I WOULD LIKE TO RETURN TO THE ISSUE OF INDUSTRIAL STRATEGY. SEVERAL THINGS HAVE CHANGED SINCE THE LAST MAJOR CHALLENGE FROM THE JAPANESE. I BELIEVE THAT FOUR ARE ESPECIALLY IMPORTANT.

FIRST, THE OUTPUT OF TRAINED SCIENTISTS AND ENGINEERS IN AMERICA DROPPED IN ABSOLUTE NUMBERS IN THE DECADE OF THE 70'S. DURING THE TIME THAT THE INDUSTRY HAS TRIPLED IN SIZE AND ITS MANPOWER NEEDS HAVE RISEN COMMENSURATELY, AVAILABLE TRAINED MANPOWER HAS ONLY RECENTLY MATCHED THAT OF 1970. IN ADDITION, THERE IS A WIDESPREAD BELIEF THAT THE AVERAGE QUALITY OF THE TRAINING OUR GRADUATES RECEIVE IS LOWER NOW THAN IT WAS THEN, DUE TO SHORTAGES OF EQUIPMENT AND INSTRUCTORS IN OUR UNIVERSITIES.

SECOND, INVESTMENT CAPITAL HAS BEEN EXPENSIVE, OR IN SHORT SUPPLY AT A CRITICAL TIME IN THE GROWTH OF THE INDUSTRY. A STUDY CONDUCTED BY CHASE ECONOMETRICS CONCLUDED IN 1980 THAT FOR THE U.S. INDUSTRY THE COST OF CAPITAL WAS TWICE THAT IN JAPAN. TODAY, WITH THE HIGHEST REAL INTEREST RATES IN OUR HISTORY, CAPITAL IS AGAIN READILY AVAILABLE, BUT THAT CANNOT REVERSE THE EFFECTS OF EARLIER UNDERINVESTMENT, OR UNDO THE SEVERAL MERGERS OR ACQUISITIONS OF AMERICAN SEMICONDUCTOR COMPANIES BY FOREIGN INTERESTS.

THIRD, JAPAN SET THE DEVELOPMENT OF THE JAPANESE SEMICONDUCTOR INDUSTRY HIGH ON THE NATIONAL PRIORITY LIST. THE JOINT DEVELOPMENT WHICH WAS CONDUCTED WITH GOVERNMENT SUBSIDIES WAS, I BELIEVE, LESS IMPORTANT THAN THE ANNOUNCEMENT OF THE PRIORITY TO BE ACCORDED THIS INDUSTRY, WHICH HAD AN ELEMENT OF THE SELF-FULFILLING PROPHESY. WITH JAPAN'S TRADITION OF GOVERNMENT-INDUSTRY COOPERATION, THAT ANNOUNCEMENT HAD THE EFFECT OF TELLING THOSE WHO MAKE INVESTMENT DECISIONS THAT SEMICONDUCTORS WERE A RISK-FREE INVESTMENT, OR NEARLY SO. AS A RESULT, LONG TERM INVESTMENT WAS AVAILABLE TO THE INDUSTRY WITHOUT THE NEED FOR EARLY PROFITABILITY.

FOURTH, AMERICA'S COMMITMENT TO RESEARCH AND DEVELOPMENT DECLINED NEARLY A FULL PERCENTAGE POINT AS MEASURED BY THE GNP DURING THE 1970'S. R&D IS THE FUEL WHICH POWERS THE ENGINE OF INCREASING PRODUCTIVITY. INDUSTRIAL R&D HAS INCREASED DURING THIS PERIOD BY THE SAME MEASURE, BUT NOT ENOUGH TO COUNTER THE DROP IN FEDERALLY SUPPORTED RESEARCH.

WHAT SHOULD OUR RESPONSE BE, THEN, TO THE WIDELY HELD BELIEF THAT AMERICA IS LOSING GROUND IN INDUSTRIAL STRENGTH? FIRST AND FOREMOST, IT SHOULD BE TO DO THOSE THINGS WHICH THE PRIVATE SECTOR CANNOT ACCOMPLISH ON ITS OWN. NONE OF THE FOUR CHANGES I HAVE LISTED CAN BE COUNTERED ENTIRELY BY THE PRIVATE SECTOR ALONE.

THE SAVINGS RATE, WHICH ULTIMATELY DETERMINES AVAILABLE INVESTMENT CAPITAL, IS LARGELY DETERMINED BY GOVERNMENT POLICY. OTHER NATIONS HAVE ACHIEVED SIGNIFICANTLY HIGHER SAVINGS RATES BY MORE FAVORABLE TREATMENT OF INTEREST AND DIVIDEND INCOME, OR CAPITAL GAINS THAN WE HAVE. TO ACHIEVE SOCIAL EQUITY, CONSUMPTION TAXES MAY BE MORE DESIRABLE THAN TAXES ON CAPITAL. ONLY CORPORATE SAVINGS, I.E. THE DECISION TO PAY OR NOT TO PAY A DIVIDEND ARE UNDER DIRECT CORPORATE CONTROL. FAVORABLE TAX TREATMENT OF DEFERRED INCOME; I.E. PENSION FUNDS HAS PROVIDED AT TIMES NEARLY 100% OF NET CONSUMER SAVINGS.

OUR GOVERNMENT MUST QUICKLY AND SURELY COUNTER THE EFFECTS OF UNFAIR OR ILLEGAL FOREIGN GOVERNMENT TARGETING. THE SEMICONDUCTOR INDUSTRY DOES NOT ADVOCATE PROTECTIONISM WHICH INVITES RETALIATION, BUT ASKS INSTEAD THAT THE U.S. GOVERNMENT ACTIVELY SEEK TO INFLUENCE OTHER COUNTRIES TO MAKE THEIR MARKETS AS OPEN AND AVAILABLE TO U.S. COMPANIES AS U.S. MARKETS ARE TO THEIR COMPANIES. THIS OPPORTUNITY DOES NOT EXIST TODAY, PARTICULARLY IN FRANCE AND JAPAN, DESPITE THE REQUIREMENTS OF GATT FOR NATIONAL TREATMENT.

OUR INDUSTRY HAS FAVORED THE UNILATERAL SUSPENSION OF SEMICONDUCTOR DUTIES BY THE UNITED STATES, WITH AN EYE TO ENCOURAGING SIMILAR ACTION BY OUR TRADING PARTNERS. THIS ACTION ALONE COULD SAVE THE U.S. INDUSTRY OVER $60 MILLION ANNUALLY, MONEY THAT IS BETTER SPENT ON R&D AND CAPITAL INVESTMENT.

IF MEASURES CANNOT BE FOUND TO COUNTER THE ADVANTAGES OF FOREIGN PRODUCERS AFFORDED BY TARGETING PRACTICES, I SEE NO ALTERNATIVE BUT TO ENGAGE IN SIMILAR ACTIVITIES OURSELVES. I

WOULD URGE THAT ANY MEASURES TAKEN BE DONE IN CLOSE COLLABORATION WITH INDUSTRY TO ASSURE THE HIGHEST COST EFFECTIVITY THAT WE CAN ACHIEVE.

RESEARCH AND EDUCATION FALL IN A SPECIAL CATEGORY. WHILE INDUSTRY CAN, AND DOES SUPPORT EDUCATION AND RESEARCH, THAT SUPPORT FALLS SHORT OF WHAT IS NEEDED TO REACH AN OPTIMUM LEVEL. IN AN INDUSTRY WITH TWO EQUAL COMPETITORS THE WINNING STRATEGY IS TO HAVE YOUR COMPETITOR BEAR THE EXPENSE OF CREATING THE PUBLIC GOOD--THE GRADUATE OR THE "                --AND THEN APPROPRIATE THAT PUBLIC GOOD TO YOUR OWN USE AS NEEDED. THUS EDUCATION AND RESEARCH (INCLUDING BASIC RESEARCH PERFORMED WITHIN INDUSTRIAL LABORATORIES) WILL BE FUNDED AT LOWER THAN OPTIMUM RATES UNLESS UNDERTAKEN BY GOVERNMENT.

INDUSTRY HAS SOUGHT A PARTIAL SOLUTION TO THE RESEARCH FUNDING PROBLEMS BY FUNDING JOINT RESEARCH EFFORTS. THE STATUS OF SOME OF THESE EFFORTS UNDER THE ANTITRUST LAWS IS NOT CLEAR AND NEW LEGISLATION IS REQUIRED TO FACILITATE EXPANSION OF THESE EFFORTS. THE ENCOURAGEMENT OF INCREASING R&D EFFORTS THROUGH TAX CREDITS IS JUSTIFIED BY THE CREATION OF A PUBLIC GOOD, AND SHOULD BE EXTENDED. TAX CREDITS FOR THE SUPPORT OF ACADEMIC RESEARCH SHOULD BE ZERO BASED. WE SHOULD TAKE COGNIZANCE OF OUR SHORTAGE OF SCIENTIFIC AND TECHNICAL SKILLS, AND ALLOW FOREIGN GRADUATES OF OUR UNIVERSITIES TO WORK IN THE UNITED STATES IF THEIR STUDIES ARE IN DISCIPLINES WHERE SHORTAGES EXIST.

WHETHER SEMICONDUCTOR DEVICE DESIGNS ARE COVERED BY COPYRIGHTS OR PATENTS IS UNCLEAR. LEGISLATION (S. 1201, H.R. 1028) HAS BEEN INTRODUCED TO CLARIFY THIS ISSUE, AND IF ENACTED

WOULD STOP THE UNJUSTIFIABLE PIRACY OF THIS INTELLECTUAL PROPERTY, PROTECTING AN IMPORTANT INCENTIVE TO INNOVATION.

I HAVE GREAT CONCERN ABOUT OUR ABILITY TO PICK WINNERS AND LOSERS. LESTER THURLOW HAS SUGGESTED, FACETIOUSLY I HOPE, THAT IT IS SIMPLE TO DO, SINCE WE NEED ONLY FOLLOW THE JAPANESE LIST. I SUGGEST THAT JAPAN HAS HAD AMERICAN SUCCESSES AS A TAILLIGHT TO FOLLOW ON THIS FOGGY COURSE. WE FORGET OUR FAILURES IN IDENTIFYING PROMISING NEW AREAS; ONLY THE SUCCESSES REMAIN FOR LONG. WHEN PRIVATE DECISIONS ARE MADE WHICH TURN OUT TO BE WRONG, THE DECISION MAKER GETS FEW OPPORTUNITIES FOR A REPEAT PERFORMANCE. I CANNOT BELIEVE THE SAME WOULD BE TRUE IN GOVERNMENT.

SINCE I HAVE SPENT MOST OF MY LIFE IN ENTREPRENEURIAL HIGH TECHNOLOGY BUSINESS, I SHOULD BE BETTER THAN MOST IN PICKING WINNERS AND LOSERS. YET I ADVISED MY WIFE A FEW YEARS AGO NOT TO INVEST IN THE LOCAL START UP WHICH HAS TURNED OUT TO BE THE MOST SUCCESSFUL IN AMERICAN INDUSTRIAL HISTORY TO DATE--APPLE COMPUTER. IT IS PRECISELY BECAUSE MANY PEOPLE, INCLUDING THOSE IN THE EXISTING COMPANIES WHICH WERE POTENTIAL ENTRANTS INTO THE PERSONAL COMPUTER BUSINESS THAT THE OPPORTUNITY WAS LEFT OPEN TO APPLE. AS A FOOTNOTE I MIGHT ADD THAT I'M FORTUNATE THAT MY WIFE, LIKE MOST, DID NOT TAKE MY ADVICE.

MOST OF ALL, HOWEVER, I BELIEVE WE NEED TO IDENTIFY OUR NATIONAL OBJECTIVES CLEARLY. THEY ARE OFTEN IN CONFLICT.

DOD WOULD LIKE TO SEE EXPORT CONTROLS TIGHTENED WHILE COMMERCE WOULD LIKE TO SEE AN IMPROVEMENT IN EXPORT PERFORMANCE. IN THE SEMICONDUCTORY INDUSTRY THE VHSIC PROGRAM

WAS JUSTIFIED IN PART FOR ITS COMMERCIAL BENEFIT. TECHNOLOGY IS NOW ON THE ITAR LIST AND THEREFORE TIGHTLY RESTRICTED FOR COMMERCIAL SALES ABROAD.

JUSTICE PREVENTED JOINT DEVELOPMENT OF SMOG DEVICES AND AIRBAGS ALTHOUGH MANDATED FOR SOCIAL REASONS.

EPA HAS MANDATED RULES BEYOND COST EFFECTIVITY.

STATE HAS SACRIFICED INDUSTRIAL AND AGRICULTURAL INTERESTS IN THE PIPELINE AND WHEAT EMBARGOES.

TREASURY HAS USED A NARROW DEFINITION OF R&D TO MINIMIZE SHORT TERM TAX REVENUE LOSS, NEGATING THE INTENT OF CONGRESS.

TRADE NEGOTIATORS HAVE PUT POLITICAL RELATIONSHIPS ABOVE THE ECONOMIC INTEREST OF THE NATION.

THE FOREIGN CORRUPT PRACTICES ACT HAS SIGNIFICANTLY IMPEDED EXPORT SALES TO MANY PARTS OF THE WORLD.

EACH OF THESE POLICIES HAS BEEN ADOPTED IN PURSUIT OF LAUDABLE GOALS BUT HAS, AT THE SAME TIME REDUCED THE ABILITY OF AMERICAN INDUSTRY TO COMPETE ON THE WORLD MARKET.

IT WOULD BE USEFUL TO HAVE THE DEPARTMENT OF COMMERCE REPORT PERIODICALLY TO CONGRESS ON THE VARIOUS CONFLICTS WHICH APPEAR IN THESE POLICIES ADOPTED TO PURSUE OTHER THAN ECONOMIC GOALS, AND THE ESTIMATED COST TO PRODUCTIVITY OR COMPETITIVENESS OF OUR INDUSTRY. THE EXECUTIVE SHOULD FURTHER PROPOSE A GAME PLAN TO ADDRESS THE ISSUES RAISED BY SUCH A REPORT.

WE NEED TO RAISE THE PRIORITY OF ECONOMIC GROWTH AND THE VIABILITY OF AMERICAN INDUSTRY IN OUR NATIONAL GOALS. ONE ONLY NEEDS TO THINK OF AGRICULTURE OR AIRCRAFT, RAILROADS OR SPACE EXPLORATION TO REALIZE THAT WE HAVE A HISTORY OF SUPPORTING

CERTAIN SECTORS OF OUR ECONOMY IN THE NATIONAL INTEREST. OUR PROBLEM TODAY IS A BROADER ONE--THAT OF ACCOMMODATING THE ACCELERATING CHANGE IN THE MAKE-UP OF AMERICAN INDUSTRY.

I VIEW THE PATH BY WHICH I CAME BEFORE THIS COMMITTEE TO BE THE ESSENCE OF THE MECHANISM BY WHICH AMERICA CAN REJUVENATE ITS INDUSTRIAL BASE, AND WIN THE BATTLE FOR INTERNATIONAL COMPETITIVENESS. I HAD AN EXCELLENT UNDERGRADUATE EDUCATION PAID FOR BY AN ENDOWMENT ESTABLISHED BY AN IOWA BUSINESSMAN. MY GRADUATE EDUCATION WAS FUNDED BY RESEARCH GRANTS FROM THE FEDERAL GOVERNMENT. WHEN I WANTED TO STRIKE OUT ON MY OWN IN A NEW INDUSTRY IT WAS POSSIBLE TO DO SO. THE FIRST START-UP WAS FUNDED BY CORPORATE VENTURE FUNDS, THE SECOND BY PRIVATE VENTURE CAPITAL. THIS PROCESS OFFERS AMERICA A GREAT ADVANTAGE OVER ITS INDUSTRIAL COMPETITORS.

MY CONGRESSMAN, ED ZSCHAU HAS STATED IT WELL: "TARGET THE ENTREPRENEURIAL PROCESS, NOT THE INDUSTRY."

AS LONG AS THAT PROCESS IS FUNCTIONING, IT WILL OFFER A FOUNTAIN OF YOUTH TO AMERICAN INDUSTRY.

H-26:5

Representative **Hamilton**. Mr. Jasinowski, you said in your prepared statement that the principal cause of our industrial deterioration is the greater volatility of the business cycle and financial conditions. We had a witness yesterday who said that if you get the right macroeconomic policies, fiscal and monetary, you're 90 percent of the way home.

I take it that you would agree with that general analysis.

Mr. **Jasinowski**. I think 90 percent is a bit high, Mr. Vice Chairman, but I would agree with the tenor of that statement. I think that the need to reform our micropolicies and make the markets more suitable to change, and I think I would probably put more emphasis on other areas. One critical area has to do with trade, where, frankly, I don't believe we have yet put together a systematic trade and export promotion policy. And you have worked in this area for a long time and I think probably have seen a good bit of that yourself. And then there is the business about American management, which I think has made great progress recently, but it continues to be significant.

So I would make the number substantially less than 90 percent. But the order of priority is correct. The major problem is macromonetary and fiscal policies, monetary policy that's been too tight and too loose, and deficits that are really much, much too large. But these other three categories are very important. I would say that, notwithstanding the fact that we have a very strong recovery underway, there are longer term, more fundamental problems in American management, industry, and other areas, that are not going to be solved by this recovery.

Representative **Hamilton**. Well, it strikes me, when you put the emphasis on macroeconomic policies as one of our witnesses did yesterday and as you do to some extent, that if I look over the past 20 years or so, I really can't remember a time when we were satisfied with our macroeconomic policies. There is always something wrong and we can always look back over the last 2 or 3 years and see major mistakes in retrospect.

What kind of assurance do you have that we can get these macroeconomic policies in the right order, anyway? I mean, we just haven't been able to do it as a historical matter, it seems to me.

Mr. **Jasinowski**. Well, and I don't think that we will be able to, Mr. Vice Chairman. I think that, in a certain sense, you're raising a philosophical question about the gap between the standards we set for ourselves in life and the reality of the degree to which we meet those. I don't believe that we will get macropolicies ever just right, in part because they are so deeply tied now to the political process and because economists, themselves, have become so politicized, that as we point out in the paper, the result is the emergence of procyclical biases in macropolicy. More specifically, politicians and policymakers want to keep business cycle expansions going longer and faster than they should; economists have joined in that process.

But I think that by looking at the kinds of problems we have had in the past, we can move much further toward a higher standard for the conduct of policy. And I think what will drive that is the fact that we are in a new international competitive situation. So as Bob Noyce and I were discussing during the break, there's a new sensitivity to the problems of international competitiveness. This is reflected in the

Congress, the administration, and in the business community. And it's more than just a nationalistic impulse; it's a recognition that we have a new post-World War II reality, which I think will drive all of the policies to be better if we intend to maintain a standard of living.

So that's a long and not quite precise answer to your question, but the question, I think, itself, has that broad kind of tension in it.

Representative **Hamilton**. Mr. Noyce, I was interested in your comment about the Japanese and your statement that you see no alternative to engaging in similar activities ourselves if we cannot counter the advantages that they now have resulting from their targeting practices.

In your judgment, are we now at the point when we have to begin to engage in similar activities, or do you have a little more patience? Would you counsel a little more patience?

Mr. **Noyce**. I think that we have several mechanisms that we are exploring now, particularly in the high tech working group under USTR, basically, trying to get more accurate information as to what is the market penetration from Japan, what their practices are, and watching the situation more carefully.

The problem will be that if we don't act in time, of course, you have created a fatal weakness in the American industry. There was a time, oh, a year or so ago, where there was a common belief, or at least a growing common belief, that the Japanese were going to absolutely dominate this industry.

If that ever becomes widespread, it becomes a self-fulfilling prophecy again, because then the investment capital is not available to expand as fast as the market expands and you serve an ever-decreasing share of the market and, finally, we have the economy of scale working violently against us.

So I think it's one that bears very careful watching and I think that if we can't find some mechanisms to counter what the Japanese are doing, eventually we'll be wiped out.

The other areas that we have taken——

Representative **Hamilton**. Let me just interrupt you there, if I may.

Mr. **Noyce**. Certainly.

Representative **Hamilton**. If you look at the pattern of our talks with the Japanese—and that's really the key country here, is it not?

Mr. **Noyce**. Yes, it is.

Representative **Hamilton**. What you see is an American effort to get the Japanese to substantially lower their tariff and nontariff barriers. In response to that, the Japanese make some moves, not satisfactory to us, but they make some moves. That reduces the political pressure back here. Then you go on for a while and the American pressure builds up for them to lower tariffs again, lower nontariff barriers. The Japanese, in response to that, make another move.

But it's a very slow process. It's a very extended process, or at least it seems to me to be so thus far. And I don't see that process changing dramatically. Certainly, you're not going to get the Japanese to move in a major way. That just runs counter to the way they do things over there.

Mr. **Noyce**. That's right.

Representative **Hamilton**. Now the question really is, Do you have time in your business? Do you have time to wait for the process to work? It's going to extend out over a period of years, it seems to me, before you really get a level playing field, as you describe it. And the question is, Do you have that kind of time?

Mr. NOYCE. We have a great concern about that. We are not counseling that we take—the ultimate action that you would take, obviously, would be to close the U.S. market. That's the plum that everybody is after. We think that that would lead to a complete breakdown of the world trading system and we cannot advocate that in good conscience, even though it might be to our own advantage, temporarily.

So we're trying to go very easy on this subject because we're afraid of precipitating something that we really don't want to have happen. So even though it may be very dangerous to do so, we are counseling caution on that and then trying to find other ways of taking care of the problem.

Let me make just one other comment.

Representative HAMILTON. Sure.

Mr. NOYCE. I do think that some of the industry-sponsored things like joint R&D should, indeed, be enhanced because that is one way of taking care of that problem, or at least adding to it, and some of the other infrastructure-building things like education, which are things that we can do without endangering that world trading situation, we would like to see done first before taking the ultimate, dropping the bomb, if you will.

Representative HAMILTON. I have a number of other questions. First, I'll turn to my colleague.

Mr. JASINOWSKI. May I ask a brief question on the line of inquiry, Mr. Vice Chairman?

Representative HAMILTON. Yes.

Mr. JASINOWSKI. And it really is to you as much as it is to Mr. Noyce. Is there any opportunity to restructure GATT in a way which would look at the targeting question—under GATT we now don't really take into account any of these industrial policy issues. Is that an avenue that the Congress and the industry should be looking at?

Representative HAMILTON. Well, my answer to that would be yes. But I don't want to establish the precedent here of the witnesses asking us questions. [Laughter.]

That would undermine the whole U.S. Congress if Members of Congress had to answer questions. [Laughter.]

We couldn't tolerate that for very long. [Laughter.]

I'll turn to my colleague, Congressman Lungren, here.

Representative LUNGREN. Thank you, Mr. Vice Chairman. One of the things that is becoming clear as we have these hearings is that industrial policy means as many different things as there are people talking about it. There seems to be some who use it as a means of describing protectionism under another rubric or describing targeting.

One of the things that I think is becoming clear is that what we're basically doing is asking to look at the implications of various policies that the Federal Government has taken under the last number of years and see what the full implications are for example, with taxing policy the issue concerns the economic effects on incentives and productivity and things of that sort?

Mr. Noyce, you seem to minimize the effects of government subsidies, on the Japanese semiconductor industry. What role do you think the U.S. Government should play in determining which industries receive investment funds?

Mr. Noyce. I would still prefer to see the direction of investment funds be a private decision until we get into some of these decisions of national defense or vital national interest.

Certainly, we are channeling investment funds now by various tax policies, subsidizing various industries by the way they are taxed. And as I think George Eads pointed out yesterday in the hearing, there's an enormous discrepancy in the amount of taxes actually paid by various segments of the U.S. industry and that has an effect on it.

The reason I say the subsidy is relatively unimportant is because when we look at the total size of the industry that was being subsidized in Japan and throw $150 or $200 million into it over a period of 5 years, that's pocket change. But the effect of that, and I think that this is the most important effect, was to say to the potential investor, look, it's safe to invest in that. We will assure that you will come out okay at the other end of that investment.

Now, if we had the same general feeling in this country that those things that are important for the country will be taken care of in some way of cooperation between the U.S. Government and the industrial group, I think that there would be plenty of investment funds available. Maybe it's the equivalent of guaranteeing Chrysler loans. I don't feel that it is, but you could certainly draw an analogy there.

Representative Lungren. Of course, you also have to assume that the decisionmaking is going to be intelligent and relevant to actual economic circumstances and not political. And that's one of the major concerns I have in all of this. When we suggest that government can assist in some of these cases, we are suggesting that they will, of course, make the proper decision.

And in your testimony, you pointed out that your wife had the presence of mind to think that investing in Apple Computers would be a good thing, but you, of course, being more experienced in that field——

Mr. Noyce. Knew it wasn't——

Representative Lungren [continuing]. Realized that that would not be the case. Thank God we have some other people out their making individual decisions so that that idea was born.

I'm intrigued by your quotation from Ed Zschau, that what we ought to do is target the entrepreneurial process rather than any particular industry. How would you suggest we do this? Are you talking about, for instance, looking at cutting capital gains tax or the impact of corporate taxation on investment? Or savings tax or particular sorts of regulations that are particularly burdensome?

Mr. Noyce. I think that that process is working extremely well right now. If we look at the amount of money going into venture capital, it has been the highest in our history. I might also point out that a very substantial amount of the money that is going into venture capital is coming from nontaxed sources, like pension funds.

So I'm not sure that a further reduction in capital gains would be advantageous there. I might get shot for making that statement, incidentally, so I have to be a little careful.

But I do think that the other parts of the system will turn out to be the bottlenecks shortly. And that is the availability of trained manpower to go into some of these new fields. And, indeed, right now, because of the lack of manpower, there is positive damage being done to the established industry by the splinter groups that are going off on their own ventures.

So I would urge Government here to take a look at some of these other areas like education and R&D as being the primary things that could be done to support that process at this time.

Representative **Lungren**. There have been some suggestions, in fact, we had testimony from Congressman Lundine earlier, of his idea that we ought to set up what he refers to the ECC's, Economic Cooperation Councils, where we would have leaders in business, Government, labor, and public interest who would suggest industrial strategies nationally and then set up similar type organizations for specific industry sectors that would be advisory only, and then in addition to that, have a national industrial development bank which would provide, as he calls it, patient capital for high-risk, high-technology industries and to provide guaranteed loans and additional capital for restructuring our basic industries.

That's about as explicit a recommendation as we've had before this subcommittee in our first couple of weeks. What would both of you say to that?

Mr. **Noyce**. Could I take a first shot at it? I do believe that getting better information in Government as to the prospects of given industries would be good and, indeed, Commerce has been starting to think about getting sectoral analysis capability and I would support that wholeheartedly.

We do a pretty good job in agriculture in gathering data and understanding what the market is. I think that there are similar jobs that could be done on other sectors of our economy.

Representative **Lungren**. Gathering and disbursement of information?

Mr. **Noyce**. That's right, and as a service to a disaggregated business, if you will. And, in particular, in that case, you also have the entire R&D being Government funded, not individually funded. In agriculture, the business is so disaggregated, it would be almost impossible for any given farmer to do research and appropriate the benefit of doing that research, except on a very, very small scale.

On the bank issue, I think the patient capital will come if the savings rate is high. The investment decision that we make with limited investment capital available is to take the highest return that we can find first. And that's entirely reasonable as an investment decision. If there is more money to be invested after that, it goes into the more patient thing.

So, again, I would feel that going back to tax policies that would encourage savings would have a beneficial effect there and I am worried again about any of these things which directs investment to a given point. I think that that will be economically inefficient.

Representative **Lungren**. Mr. Jasinowski.

Mr. **Jasinowski**. I tend to pretty much agree with what Bob Noyce has said. The NAM, itself, has no position on this bill and yet, we want to look at it very carefully, in fairness to Congressman Lundine and we promised him that we will.

My reaction at this point is that the better information is very important. We need to know the impact of the policies we've had over the past, as you've pointed out and as members on the other side of the aisle have pointed out.

Second, I think there's a tremendous need in this country for improved consensus and teamwork. That is implicit in one of the ideas, the notion of councils. What bothers me about it is that it becomes terribly bureaucratic and large. Once it becomes national, I think it tends to foster conflict rather than teamwork.

But at the industry level, it's clear from recent studies that the team spirit of the Japanese at the industry level is important, and could be adopted to improve the team spirit in our industries at their own level. But I don't see where the Government has a role in encouraging that at the national level, since this would make it very bureaucratic.

Finally, on the issue of the bank, I would just agree with what Bob Noyce has said and then go beyond that and say that there is a lot of venture capital out there for high growth companies, so the bank is not necessary for that. If it's just for the weak industries, they ought to say so and relate it to our economic development policies. And third, I would share your concern and I think many others, that this whole process has a tendency to come highly politicized in our system and will not reflect choices based on merits, but will reflect choices based on where the political power is. And it's hard to see whether that will lead to efficient economic conclusions.

Representative LUNGREN. Let me ask you another question, somewhat following up on what Mr. Noyce said. And that is, if there's limited capital available, obviously, you're going to go for the highest return and, I would add, over the shortest period of time, probably.

Mr. NOYCE. Yes.

Representative LUNGREN. And there has been a criticism that has been lodged of American business, a general criticism, that they are too preoccupied with short-term profits; whereas, we have heard some say that the Japanese are more patient or look out for the longer term profit. When Jack Albertine was here for the American Business Council, he suggested one of the reasons was because of the tax policy, that they make capital cheaper as a result of tax policy in Japan than we have in the United States and, in fact, in some cases, business is preoccupied with short-term profits because government forces them to be preoccupied with short-term profits. What would you say about that question and what type of policies ought we effect to try and change that?

Mr. JASINOWSKI. Well, I think, first of all, American management has been too oriented to the short-term. I don't think, however, that that is the most significant criticism that can be made. I think that there are others of much more consequence. But that is one of them. And it is a combination of the perverse incentives associated with tax policy and, very importantly, with inflation that encouraged management to pay far more attention to financial manipulation during the 1970's than to the manufacturing process itself.

To just add a point to that with respect to the Japanese, it is more than their tax policy; it is also their financial policy and the attention they put on both debt and equity and the way in which they apparently have some ability to manage their exchange rate.

So there is a financial side to why there is a less risky environment, to use Bob Noyce's term, for Japanese business vis-a-vis American business. On our side, we do have some incentives that very much work against effective long-term management. Beyond that, management itself simply has chosen to go with those incentives, probably more readily than it should.

Mr. NOYCE. Just to reemphasize that risk element, in an uncertain environment, where things seem to be changing rapidly, the financial incentive is to try to get the return quickly because you may be facing an entirely different set of conditions by the time the return was supposed to occur.

And, again, that's why I feel that this setting of priority on the semiconductor industry in Japan was tantamount to forcing the investment there because it announced that the Government and industry would be working together to assure that that was a good investment.

We don't have a similar kind of cooperative tradition in the United States and consequently, we don't have the same effect on the investment decisions.

Representative LUNGREN. Are there implications for antitrust policy, then, in what you're saying?

Mr. NOYCE. Absolutely, and that's why it does not occur here. And I don't know that I want to comment on antitrust policy, but many, many things that go on in Japan would be illegal in the United States.

Representative LUNGREN. The only thing I'm saying is we're talking about setting up councils and the idea of greater cooperation. You suggest that we need cooperation at the industry level and so forth. And someone suggested that one reason we don't have it is because of fears of antitrust violations, because once you enter into those areas for a cooperative effort, you're finding yourself running afoul of U.S. antitrust laws.

I don't have the total answer to it, but we are beginning to look at it in the Judiciary Committee. I would hope that we would look at those things first before we start talking about cooperation dominated, which I'm afraid it would be, by the Federal Government influence.

Mr. NOYCE. I have to agree with you. My general counsel advises me not to have lunch alone with my compatriots out there.

Representative LUNGREN. It makes a lot of money for those of us who are attorneys, but maybe that's not the proper role of government. Mr. Vice Chairman——

Representative HAMILTON. I'd like each of you to comment on the area of jobs. Where are people going to get jobs in the years ahead? Where will people work in this world that's coming up? Or are we going to have a large group of unemployable people in this country for an extended period of time?

The other day a few of us were talking with some IBM officials and they said, don't look to us to create a lot of new employment. We're not going to be doing that in the years ahead. Well, to the average person like myself, I would think that IBM might be one place that would be creating a lot of jobs, but apparently not. Where are these jobs going to be created?

Mr. **Jasinowski.** Let me say that I would look at your question, Mr. Vice Chairman, in, I think, three parts. First of all, I think the concept that the country has moved into a postindustrial society already is at least vastly oversimplified, if not fundamentally flawed, because even the whole range of industry has now become quite integrated between high tech basic industry and services.

So I don't think that that is going to happen and I would attribute these large numbers on jobs primarily to the fact that we have been in the longest postwar recession, which has gone on for 3 years, and over that time, on just a cyclical basis, have lost over 2 million jobs.

So that if we were to keep our interest rates down and get them down further and improve the management of our macropolicies and sustain this recovery, more than two-thirds or so of the jobs we have lost would be returned.

The remaining job problems I think are extremely difficult because it is clear that manufacturing is not going to increase the proportion of labor in the manufacturing process in the rest of the decades, because it runs in conflict with the need to be more competitive. That means they either have to move to services or we have to create new industries. And I think that those are the two places where you can get the additional jobs.

The third part of the answer, and it's not a satisfactory one, except for those economists who would like to live only in the long run, is that the demographic patterns will solve a substantial amount of this problem for us as we move further into the decade. The rate of increase in the number of women entering the labor force has begun to slow, and we are already on the downhill leg of the post-World War II baby boom. We will, in the future, have a closing of the gap between our labor force and our job demands.

Mr. **Noyce.** Jerry Jasinowski has mentioned my points.

Representative **Hamilton.** He mentioned your points?

[Mr. Noyce nods in the affirmative.]

Representative **Hamilton.** One of our witnesses yesterday took the view that business decisionmakers, during the past 15 years or so, had turned their focus, their energies, away from the basic decisions—investment, productivity, and these things—and were diverted by Government regulation problems, tax problems, and this kind of thing. In other words, the Government had created a lot of problems that had diverted the energies of top management.

How important an argument is that? I suppose I ought to address that to you, Mr. Noyce, since you've had some experience there. And are those factors more important than things like high interest rates?

Mr. **Noyce.** I think that there's a hierarchy of needs for success in industry which changes with the age of the industry. If we think of new industry, it becomes technology first and manufacturing second, marketing third, and then finance last. But if we take a mature industry, particularly one which has gotten various advantages through lobby and so forth, the hierarchy is exactly the opposite.

So you will find that in the new industry, that the scientists and engineers typically are in the top management slots and they are paying very good attention to these top two that I would say are important for the new industry.

If we look at the more mature industry, they tend to be finance and market people and, indeed, that has been over the last 20 years what our business schools have been teaching. They haven't been teaching technology and manufacturing, but they have been teaching finance and marketing.

I think that that point is very well taken, that when we get to uniform manufacturing technology throughout an industry, then the differential advantage lies in how the finances are manipulated and how many soap ads we run.

So I'm in total agreement with the suggestion that came up yesterday.

Representative HAMILTON. How significant a problem is the problem of human motivation and the motivation of your labor force?

Mr. NOYCE. I would say that the newer companies have worked very carefully on that. I was going to add a footnote to an earlier comment there that if we do have labor-industry-government-academia councils, the new industry will not be represented on the labor side because they are on management's side, not organized as a contrary force. And we work very, very carefully to be sure that we try to satisfy the whole human being, not just the economic human being in our employee group.

At the same time that I say that, there's another element that I have to mention again, and that is that in contrast with Japan, anyway, we have a much more poorly educated work force than they do in Japan.

Representative HAMILTON. Do you, in your industries, have a lot of worker participation?

Mr. NOYCE. Oh, the usually quality circles or whatever you call them, that sort of thing, sure.

Representative HAMILTON. Quality circles. You use that sort of thing?

Mr. NOYCE. Sure.

Representative HAMILTON. Have they been helpful?

Mr. NOYCE. Yes. There's no question but what if you can get the interest of the lower level people alined with that of the company, that they can make an enormous contribution to the success of the company.

Representative HAMILTON. I have a note here that during the 1974–75 recession the semiconductor industry cut back sharply on employment and research and that gave the Japanese the opening to dominate the world market in the 64–K RAM. Is that true?

Mr. NOYCE. I think that on employment, that is absolutely fair. On research, the cutback was relatively little. And I would also say that this time around, the industry has grown up a little bit and has been much more mature in its ability to keep people on the payroll in spite of the enormous financial difficulties.

Representative HAMILTON. You're talking about the 1982–83 recessionary period?

Mr. NOYCE. That's right, yes. But every semiconductor company, I think, went to a position of loss at least on a monthly basis during that 1974 crisis.

Representative **Hamilton**. I was dismayed a little bit by your statement that the Japanese may win. Do you think they may? Have you got any predictions there?

Mr. **Noyce**. Let me put it this way. All else being the same, if Japan has more engineers to work with, a better educated work force, and more investment capital to work with, we have a major disadvantage. And the only way I see to counter that disadvantage is to use those unique American traditions of innovation and creativity to try and counter that advantage of the Japanese. But we've got to keep that one going if we're going to win.

Representative **Hamilton**. You're prepared to recommend that the Federal Government put a lot more effort into research and development, education, and the training of Ph. D.'s in physics and similar fields?

Mr. **Noyce**. That's right. I'd like to see that R&D, though, university-based, so it's available to everybody in the country, not one particular firm.

Representative **Hamilton**. So that it's not directed toward any particular industry; is that it?

Mr. **Noyce**. Or a particular participant in a particular industry, which has tended to be the situation with DOD contracts that have gone out to industry, for instance. Those results are not widely dispersed quickly.

Representative **Hamilton**. I saw something the other day to the effect we're putting a lot of money in the semiconductor industry through the Defense Department in order to be competitive with the Japanese in the next round of this competition.

Mr. **Noyce**. Yes.

Representative **Hamilton**. Now that's an industrial policy, is it not? Is it correct, first of all, and if we're doing it, is that the kind of thing we ought to be doing?

Mr. **Noyce**. I opposed that program when it was initially started because we had full employment among those people that were competent to work in this field. I suggested to the DOD at the time that they university-base it so that we could increase the availability of trained manpower in the field.

That was not done. That program, the VHSIC program, was——

Representative **Hamilton**. What program is that? You'll have to spell that out for me.

Mr. **Noyce**. It's very high speed integrated circuits [VHSIC]. This was justified in part by its commercial impact. Just last week, the results of that were put on the international trade in armaments regulations so that we won't be able to really disburse the results of that program even throughout America for its use.

So the commercial utility of that program has been effectively negated, I think.

Representative **Hamilton**. Is it still worthwhile?

Mr. **Noyce**. Not for export trade and certainly not nearly as useful as it could be if it were done in such a way that research results could be disbursed throughout the U.S. industry.

Representative **Hamilton**. Congressman Lungren.

Representative LUNGREN. Yes; I just have a couple questions. Mr. Jasinowski, one of the comments that we seem to read in the papers continually is that we seem to have an outflow of manufacturing jobs leaving the United States for Singapore and Hong Kong and Taiwan and elsewhere. What can we do about it, if anything? Or is this something that is inevitable and do you suggest that we have to move at least for large increments of jobs in the future to the service industries or new industries as they develop?

Mr. JASINOWSKI. Well, I don't think it's inevitable. I think it's due to labor costs and the value of the yen, dollar, or the overvaluation of the dollar and, I suppose, to some extent, regulatory costs or other government additional costs that are placed on manufacturers in this country.

But of all of those, the overvaluation of the dollar throughout the 1960's, as we document in the paper, consistently encouraged manufacturers to establish export platforms abroad, or to move offshore.

The single most significant thing we could do is to cause the value of the dollar to more accurately reflect international productivity and trade trends. That would require bringing down the deficits further, in my opinion, looking at some exchange rate intervention in particular cases, and following a monetary policy that achieves greater stability rather than alternating between very tight and very loose money.

I think that those are realistic policy options and I think until we bring the dollar back into line—and we've had this problem throughout the 1970's—we will continue to see American manufacturing go abroad.

Mr. NOYCE. I'd like to make one comment on that and that is that the semiconductor industry broadly has increased the percentage of total employment in the United States over the last—the statistics I had seen were from 1976 to 1982, I believe; 1983, it may have been.

But what is happening is that with improving technology, it is the low-level jobs that are being eliminated and those are the ones that are overseas.

Representative LUNGREN. Well, we had an article or an announcement not too long ago about Atari moving some of its operations overseas. And then I just saw in the paper that they are going to lay off 1,000 people.

Mr. NOYCE. Yes.

Representative LUNGREN. Many people see a dichotomy. They say, we're losing jobs over here in basic industries, but if we're going to gain anywhere, it's going to be in high tech. And then against that, they see Atari moving its manufacturing segment overseas.

Is that a phenomenon that is occurring throughout the high tech industry and are these the lowest skilled jobs?

Mr. NOYCE. Those are the lowest skilled jobs. The jobs that Atari moved overseas are the so-called board-stuffing jobs, where you put——

Representative LUNGREN. The final assembly——

Mr. NOYCE [continuing]. The printed circuit board and you stuff components into those, board-stuffing jobs. They're not very satisfying jobs.

The more satisfying job would be to build the robot that does the board-stuffing job, and those jobs tend to be more in the United States and that equipment tends to be used more in the United States.

But, in one sense, the idea that further progress is going to eliminate many of the things that are now done overseas I think is valid. It certainly has been in our immediate industry.

Representative LUNGREN. Do you believe our workers are capable with proper training to upgrade themselves so that those who are now performing these relatively low skilled jobs which we're losing to overseas can move up the scale?

Mr. NOYCE. We have certainly been successful with some of our younger employees in upgrading them from production line workers to maintenance technicians on into draftsmen and designers and that sort of thing.

I have not seen a successful program to take care of the 50-year-old person who has been laid off from a manual skill. I think that's where the real problem lies. The younger people do pretty well.

Representative HAMILTON. Thank you very much, gentlemen. We appreciate your contributions this morning.

The committee stands in recess.

[Whereupon, at 12:07 p.m., the committee recessed, to reconvene at 10 a.m., Wednesday, July 13, 1983.]

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